

## About Our CONTRIBUTORS

ARTHUR A. SCHWEITZER, D.D.S. received the prize in operative dentistry on graduating in 1925 from the New York College of Dentistry. Doctor Schweitzer served on the oral surgery staff of Vanderbilt Clinic, a part of the Medical Center in New York, from 1925 to 1928. In 1933 he was assistant visiting dental surgeon at the City Hospital and since 1929 he has been the associate chief of the oral surgery department of St. Luke's Hospital, both of New York. Doctor Schweitzer is a general practitioner.

STANLEY RICE, D.D.S. is a graduate of the University of Southern California College of Dentistry (1925) where he was a clinical instructor in exodontia from 1925 to 1930. Doctor Rice's practice is limited to exodontia and oral surgery. Doctor Rice's article on prophylactic odontectomy of third molars showing a tendency to impaction is a tangible example of preventive dentistry.

E. BYRON KELLY, D.D.S. (University of Illinois College of Dentistry, 1902; LL.B., Chicago Law School, 1913) is a licensed specialist in prosthodontia who in conjunction with his practice has been engaged in private research for the last ten years on new denture materials: gums and resins, and plastics in particular for the last three years. Doctor Kelly's article on surgical denture acrylic splints in this issue completes a symposium of three articles on the use of plastics in dentistry which were written expressly for THE DENTAL DIGEST. The other two articles by LaMar W. Harris of Chicago and W. E. Wilson of Springfield, Illinois were published in this magazine last month. The colored illustrations accompanying Doctor Kelly's article were reproduced from kodachrome transparencies made by Mr. Curt Gottschalk, a Chicago photographer.

WILLIAM A. COLBURN, D.D.S. is recognized at once by readers of this magazine as the author of articles on denture construction and roentgenography. The illustrations for the article in the present issue were made by Mr. Leonard Frank, roentgenologist, of San Francisco who collaborated with Doctor Colburn in the writing of previous articles for us, the last time in May, 1939: IMPRESSION, OUTLINING, AND RETENTION TECHNIQUE FOR MAXILLARY DENTURES.

CAMILLE PAUL REMY is a dental technician.

# THE DENTAL DIGEST

VOL. 46

July, 1940

NO. 7

Surgery Versus Bite-Raising as an Aid in Prostheses - - - - -	230
Arthur A. Schweitzer, D.D.S.	
Prophylactic Odontectomy of Third Molars Showing Tendency to Impaction - - - - -	233
Stanley Rice, D.D.S.	
The Editor's Page - - - - -	239
Surgical Denture Splints: A New Method in Immediate Denture Service - - - - -	240
E. Byron Kelly, D.D.S.	
Dental Meeting Dates - - - - -	245
An Accurate Post-Valve Seal for Maxillary Dentures - - - - -	246
William A. Colburn, D.D.S. and C. P. Remy	
Adaptation from the Literature - - - - -	247
Diseases of Teeth and Maxillae as Cause of Trigeminal Neuralgia	
Notes on the Cuff - - - - -	250

Edward J. Ryan, B.S., D.D.S., *Editor*

Ethel H. Davis, A.B., *Assistant Editor*

708 Church Street, Evanston, Illinois

SEE SECOND COVER FOR SUBSCRIPTION DATA, ETC.

Copyright, 1940, Dental Digest, Inc.

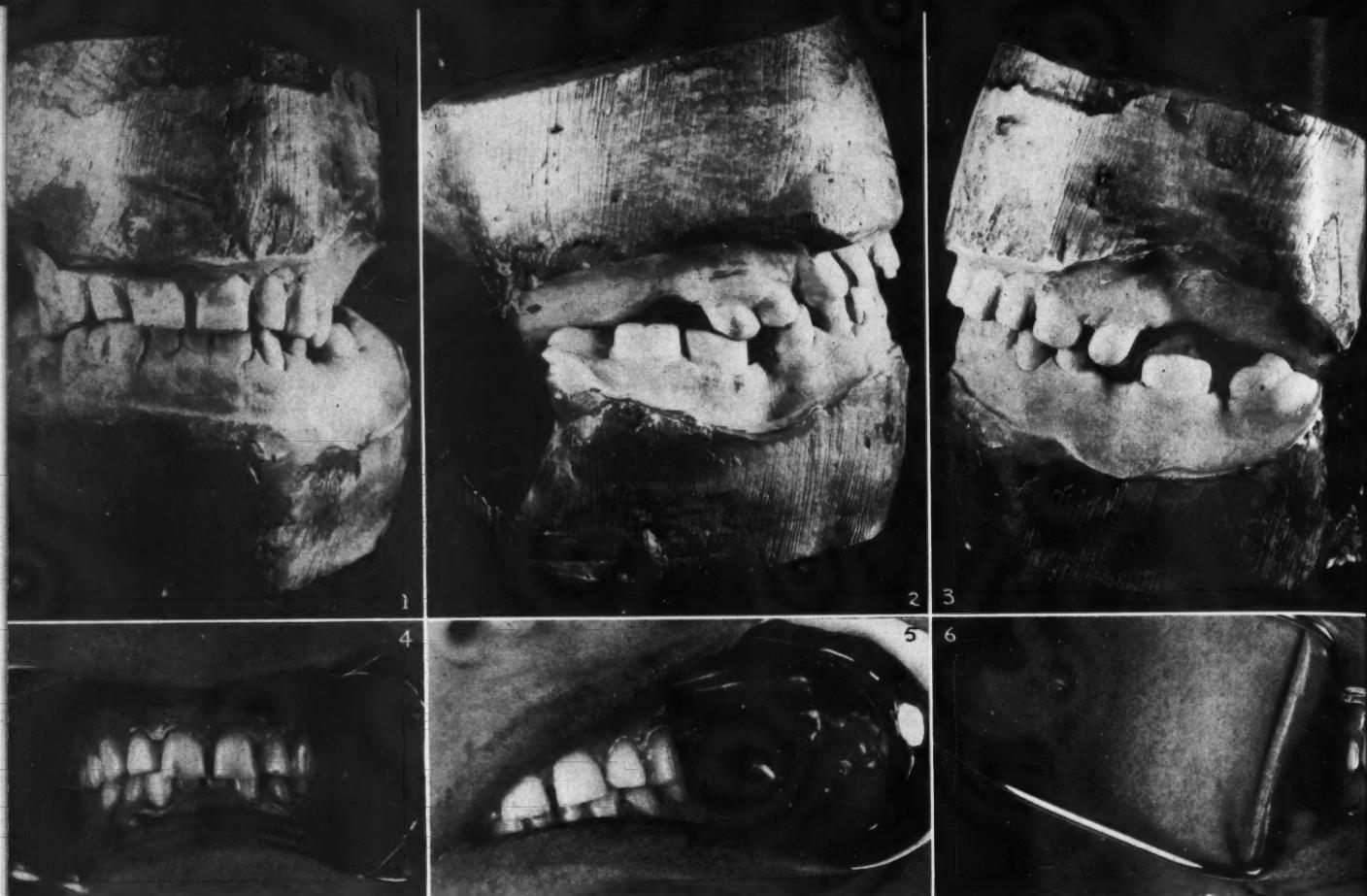


Fig. 1—Articulated model; front view before starting case.

Fig. 2—Articulated model. Note extreme closeness of bite on right side.

Fig. 3—Articulated model of left side. Note elongated upper first bicuspid, foreshortened lower first bicuspid, carious lower first molar, and tilted lower third molar.

Fig. 4—Front view of patient's mouth after surgery was completed.

Fig. 5—Left side after surgery was completed.

Fig. 6—Right side after surgery was completed.

## Surgery Versus Bite-Raising As an Aid in Prosthesis

ARTHUR A. SCHWEITZER, D.D.S., New York

THE DANGERS OF RAISING a bite have been ably discussed by John V. Mershon<sup>1</sup> who points out that we cannot exceed the developmental possibilities of our own cell structures even if prenatal and postnatal factors act to retard their full development. How, then, can a bite be over-raised for esthetics? Collapse of investing structures is inevitable because it is physiologically impossible to stretch the masticatory muscle tissue. If the masticatory muscle tissue fails to accommodate its length to an increased

vertical dimension, then either the muscles must give way or the teeth and alveolar structures must be harmed. Muscles contract and relax but do not have the power of elasticity to lengthen. The alveolar bone structure will be injured under the muscular pressure of an excessively increased vertical dimension. Structures surrounding over-built teeth are destroyed beyond repair by the driving pressure which actually pounds the teeth into the bone. The depression of teeth under these conditions is Nature's way of attempting to establish a more normal functional

level at which the muscles and teeth may act in harmony.

Doctor Mershon also points out the tremendous nervous tension of patients resulting from muscle fatigue when an abnormal vertical dimension exists.

Bite-raising has a place, but it must be done conservatively and with a view to establishing what appears to have been the normal level for the patient.

A great deal has been written about changes in the temporo-mandibular joint, after bite-raising, particularly with regard to its detrimental effect

<sup>1</sup>Mershon, J. V.: *Bite-Opening Dangers*, J. A. D. A. 26:1972 (December) 1939.

on the structures in the glenoid fossae and on the condyle head itself. I have just finished a bite-raising procedure for a patient with a hearing defect who told me after completion that she thought her hearing was slightly improved. If true, this was due to the more anterior position of the condyle's head at the new dimension created; however, not enough scientific data are available to justify bite-raising in all cases of defective hearing. There is the danger that the average inexperienced operator may over-raise the bite, causing a collapse of the dentition and an accompanying nervous reaction.

When teeth are not in function, Nature maintains a slight at-rest opening, so as to lessen the strain of opposing teeth. When a bite is correctly opened, this space should ex-

ist; if it does not, in all probability, the bite has been over-raised to the extent that there is a constant pressure on the teeth when not in normal biting function, with a greater strain during mastication. Rest is necessary for any living tissue. The dimension should be increased only to what the operator honestly feels it should be. The dimension should be restored to its original height before abnormal strains, stresses, or disease diminished it. A radical increase of the bite in an edentulous case is also done at the expense of the bony ridges and to the discomfort of the patient. Fortunately, edentulous patients soon complain of the clicking sound the dentures make and of a tired muscular feeling throughout the face, particularly in the region of the condyle. In such cases with the help of

articulating paper the height of the bite is reduced. The procedure is not so simple, however, when the patient's own teeth are present or when a restoration has been made of an esthetically acceptable anterior porcelain bridge. Even in conservative cases, it is advisable to refer the patient to a competent periodontist in order that changes may be noted and, if possible, corrected.

#### Report of Case

**Examination** — Roentgenograms were taken and study models were made. At first it seemed impossible to restore function in the posterior part of the mouth (shown in the accompanying photographs) without raising the bite considerably. The three lower right molars were found to be pulpless and the root canal fillings

Fig. 7—Articulated model made after surgery was completed. Compare with Fig. 2 to note room created.

Fig. 8—Articulated model of left side after surgery was completed. Compare with Fig. 3.

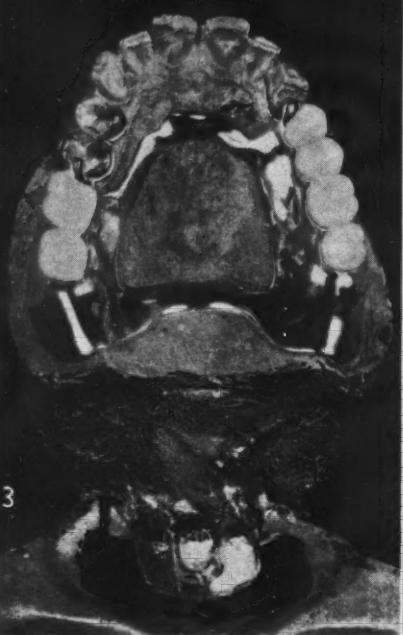
Fig. 9—Articulated model of prosthetic cases completed. Note difference in vertical dimension as compared with Fig. 1.

Fig. 10—Articulated model showing both cases in place on left side. An acrylic resin has been vulcanized to outer metal portions.

Fig. 11—Articulated model with cases in place on right side.

Fig. 12—View of lower lingual bar on model. Note that lower left cast-crowned molar has only a buccal clasp arm.

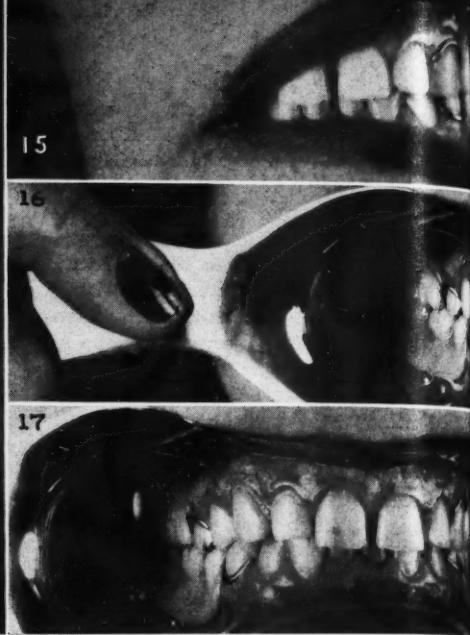




13



14



15

16

17

Fig. 13—Model showing palatal view of upper case used. Forward bar was kept away from anterior teeth and a continuous clasp was used on palatal aspect of upper right bicuspids.

Fig. 14—Another view of cases used.

Fig. 15—Completed case in mouth on left side.  
Fig. 16—Completed case in mouth on right side.

Fig. 17—Final result in mouth with both cases in place. Compare with Fig. 4 to note that vertical dimension was not changed.

were not good. The patient complained of vague pains on this side of the face.

**Procedure**—1. All three lower right molars were extracted and the bone trimmed considerably to make room for an upper and lower prosthetic appliance. Even after a substantial portion of the alveolar process was reduced, however, there still remained an adequate ridge for any future need. It was not necessary to trim any of the bone on the upper right ridge.

2. A lug inlay was made for both the lower right first bicuspid and upper right second bicuspid. Both were later to receive Gillette clasps with lugs.

On the left side, surgery was also necessary. The upper left first bicuspid had elongated so much that it almost occluded with the lower alveolar ridge. This tooth had been extremely

sensitive from time to time, causing at one period a severe neuritis of the face.

3. The upper left first bicuspid was extracted and sufficient bone was trimmed away to make room for partial dentures.

4. An inlay was made on the distal of the upper left cuspid preparatory to receiving a Gillette lug clasp.

5. The lower left side presented a tilted third molar biting on the upper ridge. This was leveled off distally and then covered with a cast crown having a lug in its mesial aspect.

6. The lower left first molar was extracted because it was carious, and an alveolectomy was done to create more room.

7. The lower left first bicuspid was pulpless and foreshortened. I decided to cast-crown it, using gold.

8. Later the buccal portion of this crown was porsonized, and made to

carry a distal clasp lug. Porsonizing is a new process whereby porcelain is baked or oxidized onto a special gold. It is not cemented to the gold but rather oxidized to it.

9. After the surgery was accomplished, the prosthetic procedure was simple: There was sufficient room for a lower lingual bar and upper palatal case. It will be noted by comparison that the vertical dimension with the completed partial dentures in place is exactly the same as when this case was started, and the patient seems to be getting along well. Owing to the tilting of the lower left cast-crowned third molar and in order to facilitate insertion and removal, only a buccal arm was used in clamping it.

10. Both upper and lower cases were made. Tube teeth were used and acrylic resin was used on all buccal portions of the two cases.

252 West Seventy-Ninth Street.

# Prophylactic Odontectomy of Third Molars Showing Tendency to Impaction

STANLEY RICE, D.D.S., Los Angeles

THE EXODONTIST OBSERVES many serious disturbances resulting from the presence of third molars. He is usually consulted when either primary or secondary complications associated with third molars occur. Many of the difficulties might be prevented by the early removal of third molars.

The trend of medical and dental science is toward prevention and with this in mind, a prophylactic odontectomy is suggested for the removal of third molars before they become harmful.

## Removal of Third Molars before Orthodontic Treatment

The desirability of early removal of third molars from an orthodontic standpoint is advocated by Spencer R. Atkinson, professor of orthodontics at the University of Southern California. Appearing before the Southern California Society of Exodontists and Oral Surgeons, he recommended removal of all third molars as early as can be accomplished provided that the other teeth are in a healthy condition.

Doctor Atkinson has a complete collection of juvenile and adult skulls obtained from all parts of the world, and his generous cooperation has made possible the illustrations that accompany this article. He has approximately 500 specimens, of which about 250 are those of children of varying ages. In making a thorough study of growth and development of the teeth and jaws at all ages, he has recorded the effects of the presence of third molars. He has noted that 80 per cent of the specimens with third molars present showed destruction in the retromolar areas as a result of infection. Other common disturbances shown in his specimens which could be attributed to third molars are malocclusions and evidence of periodontal disease.

From an orthodontic standpoint, Doctor Atkinson believes in eliminating the third molars before orthodontic treatment is attempted. He observes that in order for the teeth



Fig. 1—Lateral view of a skull with the key ridge marked by dotted line above mesio-buccal root of upper first molar.

to be in normal occlusion and proper position, the maxillary first permanent molars should occupy a position distal to what he terms the "key



Fig. 2—Horizontal section of maxilla.



Fig. 3—Skull dentures in double protrusion showing denuded roots.

ridge" of the maxilla. The key ridge is a strong ridge of bone extending downward and forward from the anterior portion of the zygoma, to a position over the mesio-buccal root of the first permanent molar. This key ridge divides the maxillary bone into anterior and posterior portions as shown in Fig. 1 which is a lateral view of a skull with the key ridge plainly marked.

If the first molars are allowed to assume a position mesial to the key ridge, the anterior teeth will protrude too far forward and even if in perfect alignment, they will give the patient the appearance of a "mouth full of teeth." The anteriors in a protrusive position may be weakened by a lack of labial alveolar support and may predispose to periodontal disturbances later in life.

If the upper first molars are allowed to assume a position mesial to the key ridge, their alveolar support will be weakened owing to the narrowing of the maxilla in an anterior direction as it forms the canine fossa. This is shown in a cross section of the maxilla at a point near the apexes of the maxillary teeth (Fig. 2). The roots of the first molar would then project partly through the labial cortical plate (Fig. 3). All teeth with such deficiencies of periodontal support are predisposed to later periodontal disturbances.

Fig. 4, A, shows a crowded condition of the anterior teeth. The first

thing to be accomplished here is to move the posterior teeth distally as shown on the model in Fig. 4, B, where a section of the plaster cast has been cut and moved to illustrate what will be later accomplished in the mouth. It is important to precede orthodontia in such a case with the removal of the upper third molars to allow ample retromolar space into which the second molars can be moved. Even though a distal movement of the first and second molars could be accomplished without removal of the third molars, their tendency to impaction would be increased.

Figs. 5, 6, and 7 are roentgenographic prints of orthodontic cases showing the effect on normal occlusion because of third-molar interference. Fig. 5 is an upper second molar which elongated from the pressure of the erupting third molar, causing an opening of the bite and necessitating extraction of the second molar. In Fig. 6 is a somewhat similar condition in which the lower second molar was elevated, also causing an open bite. In this case, the impacted lower third molar was removed and the condition corrected by orthodontia. Fig. 7 shows the lower second molars tilted forward and depressed owing to lower third molar impactions. Naturally, the first step in treatment is to remove the third molars to allow space to raise the second molars into proper position.

In many instances, orthodontic treatment is carried on for several years without consideration of third molar development. Such an oversight may result in the undoing of what has been accomplished to obtain normal occlusion and pleasing aesthetics. Many orthodontic cases relapse because of the forward pressure of impacted or erupting third molars.

The roentgenographic prints shown in the upper part of Fig. 8 were taken at age 14, prior to orthodontic treatment. In the lower views at age 16, the appliances have been removed after regulation. This is an excellent example of how unerupted third molars become more deeply impacted during the period illustrated.

Routine removal of all third molars would not only be an aid in all cases requiring orthodontia, but also in cases such as the one illustrated in Figs. 9 and 10, showing the interference with normal centric relationship as a result of pressure from the third molars.

The forward pressure of erupting or impacted third molars, according to David McLean<sup>1</sup> of Los Angeles, is a frequent cause of what he terms "centric interference." In this condition, the cusps and ridges of the occlusal surfaces of upper and lower teeth conflict in the last millimeter or two of centric closure (Fig. 9). Constantly throughout the day and frequently during the night, the cusps and ridges of the occlusal surfaces bump and slide to full closure (Fig. 10). Inasmuch as this interference falls upon the distal inclined planes of lower cusps and the mesial inclined planes of upper cusps, these teeth are thrust against the cancellous bone in the interproximal spaces between the teeth. This pressure causes the interproximal bone to be resorbed and deep interproximal pyorrhea pockets result. The prevention of this condition,

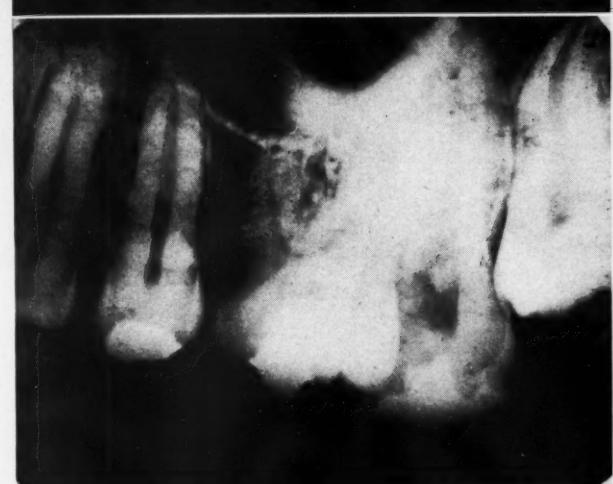
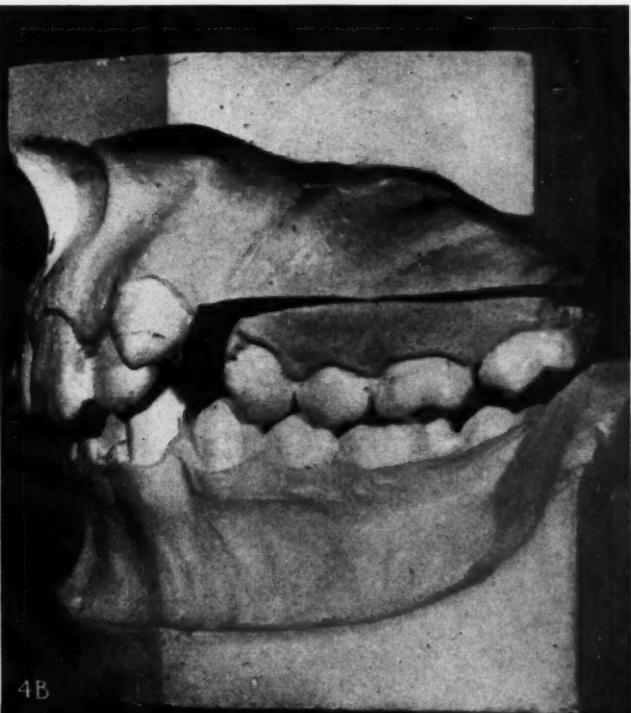
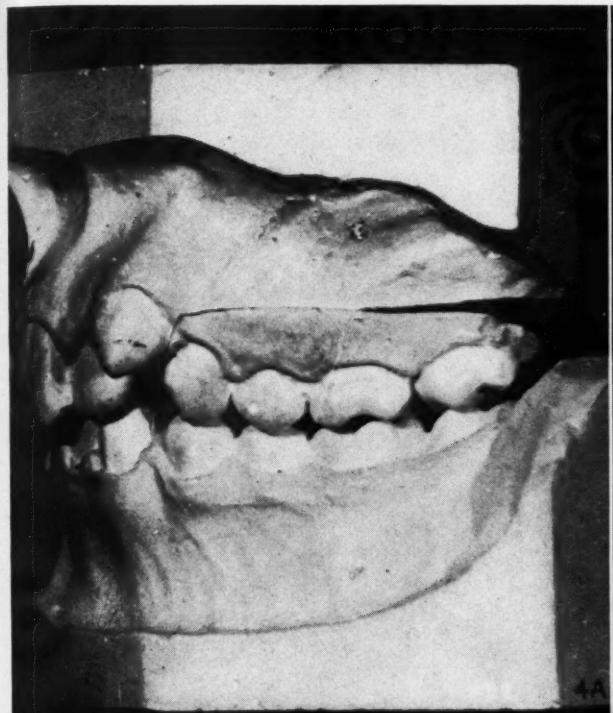
<sup>1</sup>McLean, D. W.: The Diagnosis and Correction of Occlusal Deformities Prior to Restorative Procedures, J. A. D. A. 26:928 (June) 1939.

Fig. 4—A, Orthodontic study cast showing denture anterior to normal key ridge relationship. B, Cast of case with section moved posteriorly to proper position in relation to key ridge.

Fig. 5—Upper second molar elongated from pressure of erupting third molar.

Fig. 6—Elevation of lower second molar due to pressure of lower third molar.

Fig. 7—Lower second molars tilted forward and depressed owing to impacted third molars.



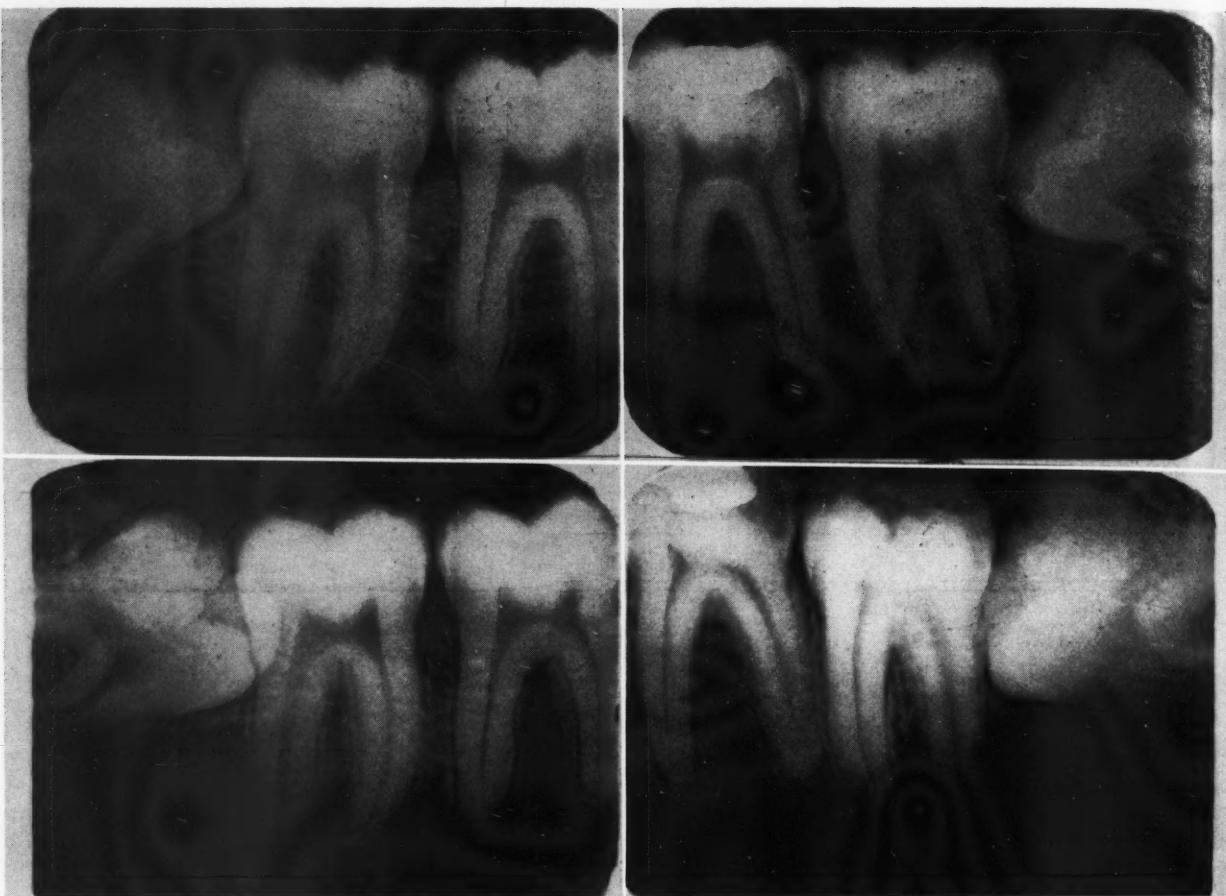


Fig. 8—Unerupted lower third molars at age 14 (upper views). Lower views of same case at age 16 showing tendency for third molars to become more deeply impacted.

which is now beginning to be considered seriously by periodontists, lies in the early removal of the third molars.

E. U. Scharff<sup>2</sup> advises biennial roentgenograms for children:

Begin at the age of six or seven years if possible, and repeat every six months thereafter until they have passed adolescence. In this way many abnormalities are discovered when their correction is less difficult. After securing many roentgenograms of children at varying ages and developments, we concluded that the best time to operate for removal of third molars was before the crown had fully developed; if possible, when it had reached about 2 mm. in thickness. Usually at the age of ten to thirteen years, depending upon the development of the child, only 2 mm. of the crown will have developed.

#### **Removal Advocated When Calcification Begins**

The advantages of removing third molars soon after beginning of calcification are obvious. In the early stages, the crypt is distended almost to its full size, but the calcified crown

is still small. Later the calcified crown fills the whole crypt, and its manipulation becomes progressively more

difficult until the fully formed impacted tooth necessitates a complicated and serious surgical operation.



Fig. 9—Initial point of closure in centric interference case. (Courtesy of David W. McLean)

<sup>2</sup>Scharff, E. U.: Importance of Early Diagnosis and Removal of Mandibular Third Molar, Am. J. Ortho. & Oral Surg. 24:369 (April) 1938.



Fig. 10—Case shown in Fig. 9 in full centric closure. (Courtesy of David W. McLean)



Fig. 11A



Fig. 11B



Fig. 11C

Fig. 11—Study of development of molars. A. Enamel formation of second molar completed and bud of third molar on top of ridge. Approximate age, 6 years. B. Germ of third molar increases and becomes submerged from superior surface of ridge. C. Development of third molar at about 11 years. Roots of second molar have begun to calcify. Third molar germ sinks downward and calcification of crown begins.

#### Development of Third Molars

A study of the development of the molars, as shown in Figs. 11 A, B & C, begins with a child at approximately 6 years of age (Fig. 11, A). The enamel formation of the second molar has been completed and the bud of the third molar is on top of the ridge in a shallow depression or channel.

At 9 years (Fig. 11, B) with continued development, the germ of the third molar increases in size and becomes submerged from the superior surface of the jaw.

Fig. 11, C shows development of the third molar at about 11 years. The roots of the second molar have begun to calcify, the third molar germ sinks downward and calcification begins. Early third molar development is shown in Fig. 12, a dissection of the mandible of a child.

A similar process takes place in the

development of the maxillary molars as in the mandibulars (Fig. 13).

As the pterygoid plates widen, in lateral growth, to make more space for development of the nares, the developing upper third molars are moved toward the buccal. If the maxilla does not develop forward as it should, there is a tendency to cause impaction of the maxillary third molars.

As has been illustrated, there is an early period when the germ of the third molar lies uncalcified upon the surface of the mandible. It then begins to submerge into the bone, calcifying as it does so. It is, therefore, logical to remove the germ during that early state.

### **Advantages of Prophylactic Odontectomy**

The advantages of prophylactic odontectomy are described by C. Bowdler Henry<sup>3</sup> of London, who bases his experience on ninety-seven enucleations as follows:

The operation is quickly and easily performed. The procedure contrasts most favorably with the difficulty of extracting the same tooth when the crown is formed, and still more when it is deeply buried or horizontally placed with perhaps divergent curving roots. The trauma is less and the patient benefits by losing the tooth at a time when the bone is soft and healing is rapid, and before infection has crept in. Instead of a socket which may take six weeks to heal and give trouble and post-operative pain, the incision of this operation heals by first intention and the crypt is quickly obliterated. There is no disability.

### **Comments**

Further research is needed. The approximate age when the third molar germ lies on the surface must be related to the eruption of the first and second molars. The science of interpreting the roentgenograms of that period must be developed to enable unfailing recognition of the surface depression in which the tooth germ will be found. A technique must be perfected for accurately locating the depression prior to incision through the soft tissues.

With these advances, it is possible to think of a day when short flaps of soft tissue will be laid back and the germ of the mandibular third molar will be removed with a curet, thus preventing the bone surgery required in later periods.

1048 Roosevelt Building.

<sup>3</sup>Henry, C. B.: Prophylactic Odontectomy of the Developing Mandibular Third Molar, Am. J. Ortho. & Oral Surg. 24:72 (January) 1938.



Fig. 12 (top)—Dissection of mandible of a child showing early third molar development.

Fig. 13 (bottom)—Maxilla of child showing early development of permanent teeth.

## **CHANGE OF ADDRESS**

THE DENTAL DIGEST will be grateful to readers who change their addresses if they will send both the old and the new address. Please also allow at least two weeks for an address change to become effective. Mailing envelopes are of necessity addressed two weeks or more prior to the publication date; hence when your address change reaches us late in the month preceding publication, it is often impossible to make it effective before the second month following.

## *The Editor's Page*

---

THERE ARE THREE periods in the lives of women when the dentist may expect increased susceptibility to tooth decay—during puberty, pregnancy, and at the menopause. We are generally agreed that adolescence is a trying period for the dentition of both girls and boys. There is no unanimity of opinion, however, regarding the increased susceptibility to dental caries during pregnancy. Some observers insist that such a phenomenon occurs with regularity and other observers deprecate the likelihood of such a condition. The old wives' tale that for every child a tooth is lost seems to have some basis in clinical experience. Both physicians and dentists are more insistent now than formerly on proper dental care during pregnancy. At one time the negative attitude was so extreme that women were advised not to have any dentistry done during pregnancy.

The postnatal forces that produce tooth decay are many and complex and generally unknown. Schour and his associates have shown that the developing tooth responds readily and dramatically to metabolic tides and that, therefore, prenatal influences may be of supreme importance in building a sound dentition. The mouth hygiene of the pregnant woman should be thorough, and constant attention should be paid to the gingivitides of pregnancy. Her diet should be watched with particular care to be certain that she is supplied with the proper minerals and vitamins. Sheldon<sup>1</sup> suggests that "a well balanced diet built up around five main articles (meat, eggs, milk, vegetables, and fruits) will supply the essential elements. One or two eggs daily will correct a deficiency of vitamin D. One quart of milk supplies 1.2 Gm. of calcium, which is adequate for the normal demands (1 Gm. daily).

"If the expectant mother is unable to drink milk and to eat proper amounts of green vegetables, it becomes necessary to add calcium to the diet. During those months when there is

little sunshine, it is advisable to add some form of cod liver oil, because of the beneficial effects of vitamin D in the promotion of absorption of calcium. If the diet is deficient in fruit juices, or if the patient has spongy gums which bleed easily [gingivitis of pregnancy], ascorbic acid is an essential therapeutic procedure."

Sheldon further points out that dental foci have in certain cases some etiologic bearing on the toxemias of pregnancy and the puerperal infections. Chronic dental foci are systemic depressants and by their nature are likely to throw an increased load on the excretory organ, the kidney, which is always burdened by the increased demands of pregnancy.

There have been many debates regarding the attitude we should have toward dental surgery during gestation. Present day obstetricians seem to feel that tooth extraction and other operative procedures can be done safely, provided the operation is not prolonged and exhausting. Sheldon, however, warns of a dangerous period which must be considered when operating upon pregnant women. He is of the opinion that spontaneous abortions are most likely to occur at the time of the month when the menses would occur if the patient were not pregnant. This warning should be kept in mind when planning operative procedures for pregnant women.

Sheldon makes another strong plea for dental care during pregnancy when he points out that modern obstetrical practice requires the use of both analgesic drugs and inhalation anesthesia during labor and at delivery. It is important, therefore, he says, that at the time of parturition there should be no loose teeth nor loose restorations which might be aspirated.

Dental vigilance should not be relaxed immediately upon the birth of the child. It is probably a fact that the period of lactation is also one of stress and strain on the dental mechanism and the woman should be watched as carefully for several months after the birth of the child as she was during the months of pregnancy.

<sup>1</sup>Sheldon, C. P.: Dental Problems Associated with Pregnancy, New England J. Med. 222:260 (February 15) 1940 and condensed in Digest of Treatment, 3:889 (June) 1940.

# Surgical Denture Splints: A New Method in Immediate Denture Service

E. BYRON KELLY, D.D.S., Chicago

NOTHING IN MODERN dentistry has created as much interest among our profession as the practical application of some of the new synthetic plastics. A recent development in these materials has resulted in remarkable improvements which are now being used in the various departments of prosthetic dentistry. Crowns, bridges, inlays, partial and full dentures made of the new synthetic plastics have been placed in the mouths of patients awaiting the verdict of time which alone can tell the story that may revolutionize the practice of dentistry. The use of synthetic plastics in the field of dentistry may be traced to the tremendous amount of research in chemistry by institutions and manufacturers who have found that synthetic materials possessed qualities far beyond that of natural products. According to a report in *Chemical Industries* of February, 1940, the consumption in the natural supplies of four textile fibers (wool, cotton, linen, and silk) increased less than one-half in the last twenty-five years, whereas that of the same four synthetic fibers has increased 750 times during the same period.<sup>1</sup> The United States patent office in recent years has been swamped with applications both for materials and the machinery for their manufacture.

The outstanding accomplishment in dentistry with plastics in 1939 was the introduction of tooth-colored acrylic resins in denture construction. In such cases the entire denture, including the teeth, are made of synthetic plastics of acrylic resin.

In the June issue of this magazine, Doctor La Mar Harris who has collaborated with me in the study of tooth-colored plastics presented a report on the manipulation of acrylic resins for jacket crowns in the mouth. My article will be confined to surgical denture splints designed for immediate restoration service. That appliances of this character are practi-

cal and will fulfill the requirements of any transitional denture has been demonstrated by analysis of more than thirty-five cases of splints and dentures placed in the mouths of patients during last year in my practice.

To be successful, immediate dentures or splints depend on two important factors: (1) the condition of the mouth tissue before and following the removal of natural teeth and (2) the design of the appliance constructed for the purpose of restoring the lost part in form and function and appearance. There must, therefore, be no radical changes in the natural characteristic expressions of the patient. It is my belief that the reproduction of natural teeth in form, position, occlusion, and color, as well as the retention of the vertical dimension, can best be accomplished by the use of the surgical denture splint. A surgical denture splint as referred to here may be defined as an appliance constructed entirely of synthetic plastics, the teeth of which are an exact duplication of the patient's natural alinement obtained directly from the original impression. The term "surgical" is used to indicate that the purpose of the splint is to protect and control the tissue by assisting Nature in the repair of the injured parts. This is further accomplished by the use of a surgical zinc oxide eugenol paste which is placed in the splint after the extractions.

In the technique to be described here the plastic used consists of a powder polymer and a liquid monomer. For the teeth, tooth-colored acrylic is used in connection with a regular pink acrylic resin.

## Technique

1. First extract the third molars and all badly broken down teeth and roots. Remove only those bicuspids and remaining molars that may be difficult to extract at the time of the immediate service. The removal of all posterior teeth early to permit healing and hardening of tissue in

this area is not recommended. There can be no equalization of poundage resistance and therefore a greater taxation is placed upon the weak structure at the anterior portion of the mouth. This condition soon results in an unequalized balance for the splint or denture.

All tooth cavities should be restored with cement to insure a uniform and desirable cast.

2. The impression should be taken in the following manner:

- a) A suitable tray should be used which will carry the impression material freely around the teeth without too much palatine bulk.

- b) First use a good hard compound and quickly adapt to the labial, buccal, and palatine areas for the purpose of boxing.

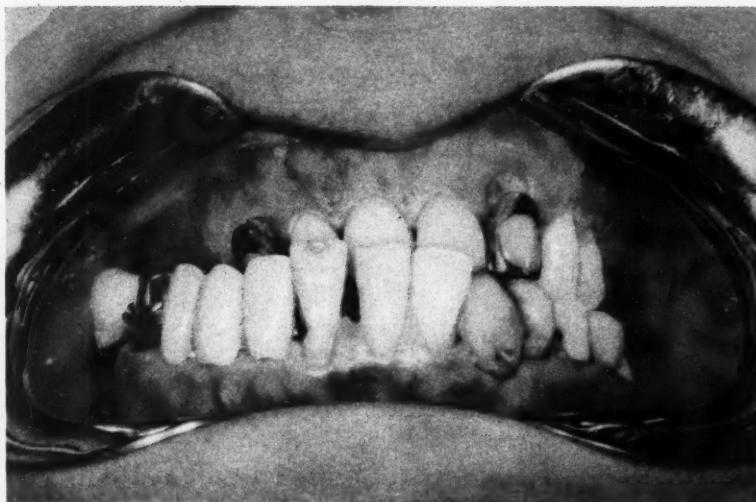
- c) Remove and chill. Cut away the parts of the semi-formed impression, so that it may be returned to the mouth without difficulty.

- d) Heat an elastic compound (Groff's) and place in position to complete the detailed impression. As this softened material will now be trapped by the hard compound an excellent impression will be obtained (Fig. 1).

3. *Pouring the Impression*—Casts are prepared by using soluble material for the teeth and completed with stone or plaster for the base. This is done by preparing a mixture of solvent plaster (S. S. White) with an equal amount of stone. This mix is poured into the tooth depressions of the impression and the remainder of the cast is completed by adding a regular mix of stone or plaster. The cast when hard is carefully separated from the impression in warm water—not boiling water. It should present reddish soluble teeth and a white base as the remainder of the cast (Fig. 2).

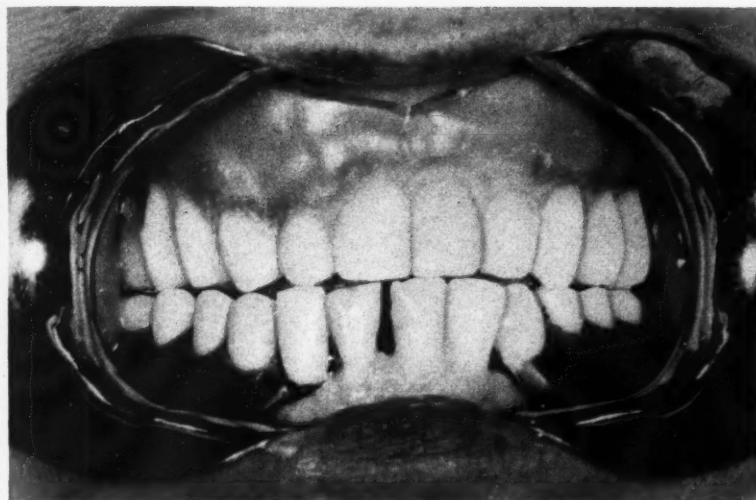
4. Whenever necessary the cast or casts should be mounted on the articulator, but when there are only a few teeth missing and only the upper or lower denture is to be constructed, the case may be designed and com-

<sup>1</sup>See also: Plastics Continue to Advance, Chemistry and Metallurgy, 47:78 (February 1940).



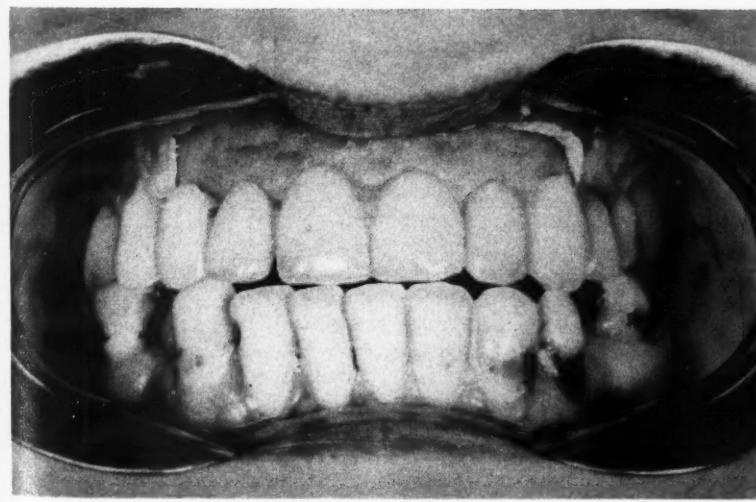
**Color Plate A**

Mouth conditions before upper teeth were removed. (See Figs. 11 and 12.)



**Color Plate B**

Same case with restoration in position.



**Color Plate C**

Exact reproduction of natural teeth in form, position, occlusion and color. (See Fig. 13.)

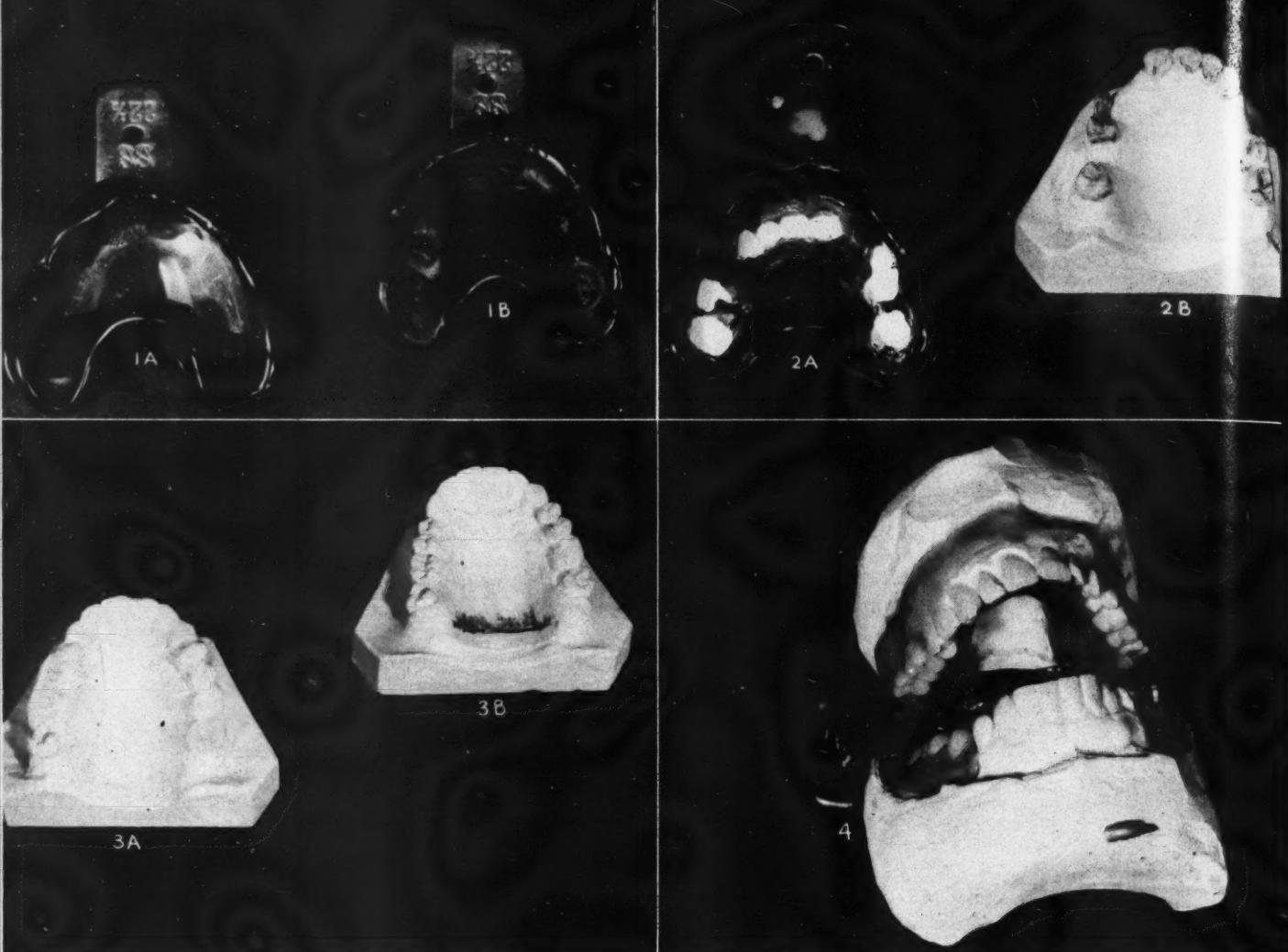


Fig. 1—A, Snap impression in hard modeling compound intended to trap elastic compound to follow; B, elastic compound used to complete detailed impression.

Fig. 2—A, Soluble plaster and stone mixed and placed in tooth section of impression; B, cast completed showing teeth (dark)

of soluble plaster stone with base (white) constructed of stone.

Fig. 3—A, Space between teeth filled with soluble plaster for carving.

Fig. 4—Case on articulator, waxed, and space filled with porcelain forms. Cervical lines (left) carved high for "butting."

pleted from the single cast without any mounting.

**5. Filling in the Tooth Spaces**—The spaces formed by the missing teeth on the cast are filled in with either ordinary tooth forms or by the addition of another mix of the solvent plaster in stone and then carved to form a full complement of teeth (Fig. 3).

6. At the necks of the teeth on the cast the cervical line is made more defined with a sharp instrument. If the immediate splint is an upper and the teeth are to be butted, it is necessary to cut away more stone at the cervical margin as there must not be any space at the gum line in the finished case. In the palatine area it is advisable to postdam heavily by scraping the cast but it should not be extended over the tuberosities.

7. Surgical splints are waxed as in

ordinary immediate dentures but it is necessary to have the wax extend onto the teeth of the cast in such a manner as to preserve the esthetics. If the natural teeth are short, the cervical lingual and buccal tooth line should be deepened and waxed accordingly. A little more surgery may be required in the extractions. The dentist is cautioned not to wax the case too thin; any excess material may be readily removed from the completed case (Fig. 4).

8. After the filling in of the missing tooth spaces and waxing the case, foiling is done with a .002 gauge tin foil. In the foiling of a splint the entire surface of the teeth and waxed parts must be smoothly covered. No breaks or overlaps should occur on or around the teeth as these defects will be reflected in the tooth form and color of the finished case (Fig. 5).

**9. Investing in the Flask**—The foiled cast should be invested in the flask in such a manner that the front part is raised to correct any undercuts which might cause the cast to break in the separation. Undercuts in the buccal region should be waxed heavily for this purpose. When possible a slight right-angle boxing should be made to trap the soft plastic for more condensation. No gates should be used with acrylic resins.

**10. Completion of the Flanking**—Completion of the flanking is done in the usual manner, using plaster of Paris. Gold plated metal beads, approximately 5 mm. in diameter attached on the impression and incorporated when the cast is made will insure a close adaptation of acrylic to the palate in the finished appliance (Fig. 6).

**11. Separating the Cast**—In sepa-

rating the cast it is necessary to boil the case in order to break down thoroughly the soluble plaster teeth. When the flasks become separated the remaining portion of the broken down teeth and forms are removed and this half of the flask is thoroughly cleaned (Fig. 7).

12. On the cast half of the flask, indentations are cut to represent the root depressions which will follow the removal of the natural teeth.

13. Foiling is completed by the use of a thin .0005 tin foil. Both halves of the flask are then cleaned with chloroform and any breaks in the foiling are corrected by the use of glossy glaze (Fig. 8).

14. *Packing the Case with Acrylic Plastics*—Before attempting to pack the acrylic resin into the flask, it is important to have both halves clean, and they should be warm but not too hot.

The selection of the acrylic tooth colors for the teeth is an individual

problem. Unfortunately tooth-colored acrylic polymers at present are not sold by the regular dental supply houses but in a short time there is every assurance that a standard tooth color shade will be available for the profession. In the meantime, there are the basic metallic pigments: brown, yellow, grey, and blue, and the vegetable dyes. These pigments and dyes must be chemically free from any poison. Any of these pigments or dyes may be combined with extra-fine powder for the color.

**WARNING:** *It is important to stress here that ceramic color pigments should not be used unless they are certified as being free from lead and arsenic.*

**Tooth Sections Packed with Colored Acrylic First:** It is usually necessary to use two colors to reproduce natural shades of teeth. This is done by packing the tips of the teeth with a lighter tint and then adding a darker solid color to blend evenly in the completed

tooth. This may be accomplished by preparing two mixes, one for the tip and the other for the base of the tooth.

**Mix 1 (Tip Color):** Use a light yellow with a trace of grey or blue powder. This mix should be thin and only a small portion is necessary, approximately 25 grains of powder to 1 cc. of liquid which must be thoroughly spatulated to break down the solids. The mix is applied uniformly in the tooth depressions. It is spread slightly up the labial and buccal sides for blending with the base color to follow.

**Mix 2 (Base Color):** For the body or base mix use 30 grains of solid yellow or brown powder to 1 cc. of liquid, in a trifle stiffer batch, and spatulate as before; then, complete the tooth building by rounding for root representation (Fig. 9).

Do not hurry the packing and use care in making the teeth uniform. This may be done by separating each

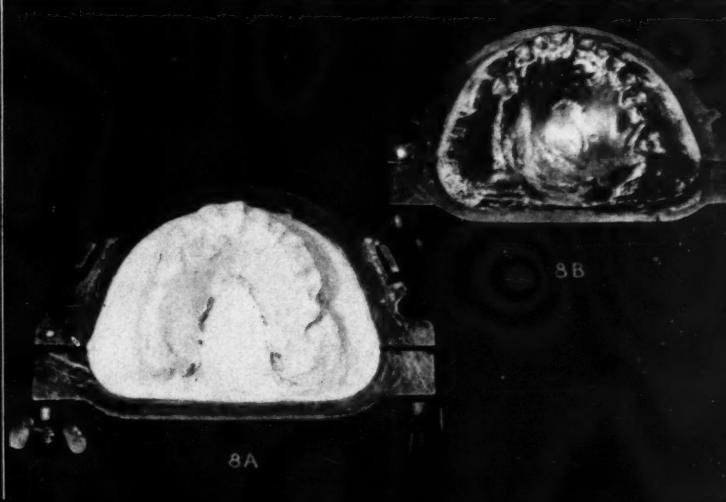
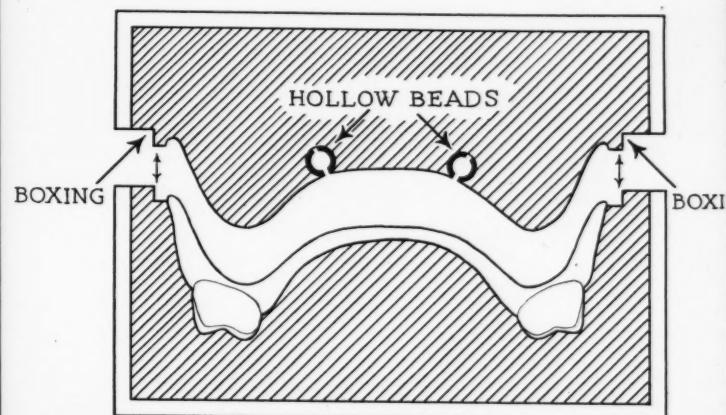
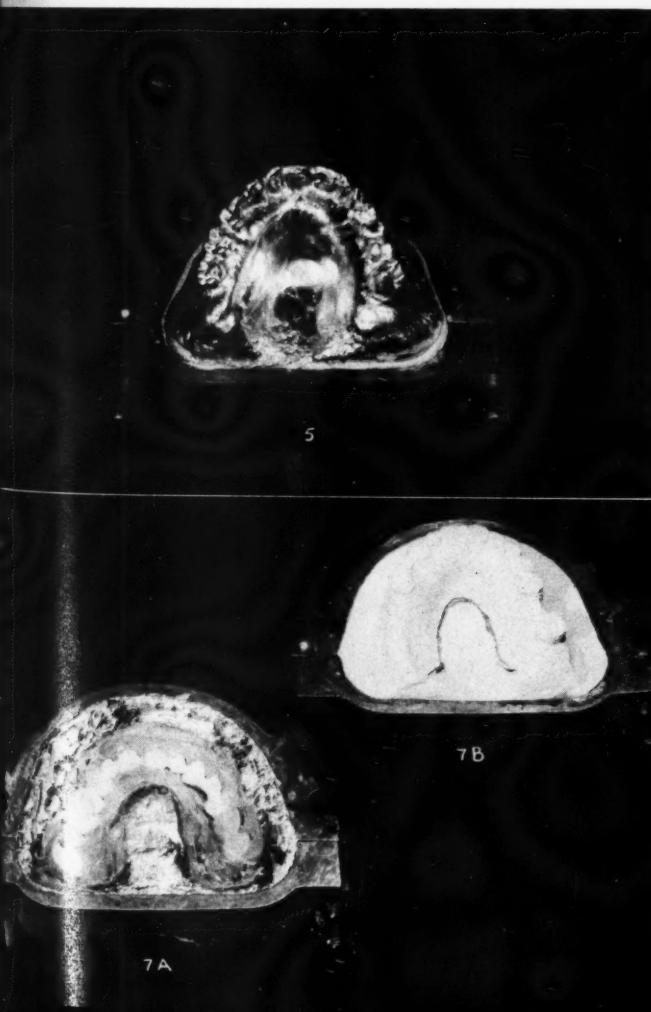
Fig. 5—Cast completely foiled. Teeth must be covered smoothly without breaks.

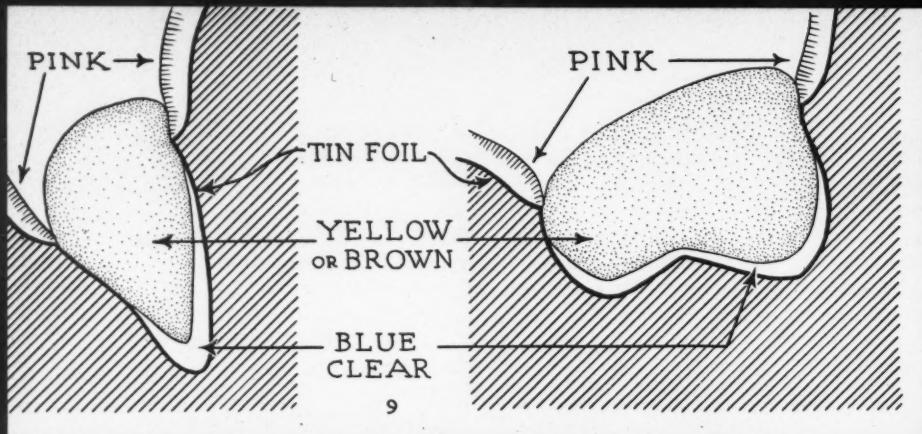
Fig. 6—Boxing for compressing acrylic resin. (Cross-section.) Metal beads are embedded in plaster cast for palatine adaptation. These are gold plated metal beads, readily obtainable.

Fig. 7—A, Flask separated by boiling, showing remains of soluble

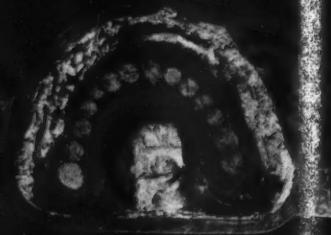
teeth and porcelain forms; B, cast side of flask. Outlining indicates postdamming.

Fig. 8—A, Depression cut to approximate removal of natural teeth; B, depression cut to approximate removal of natural teeth and covered with .0005 tin foil.





9



10

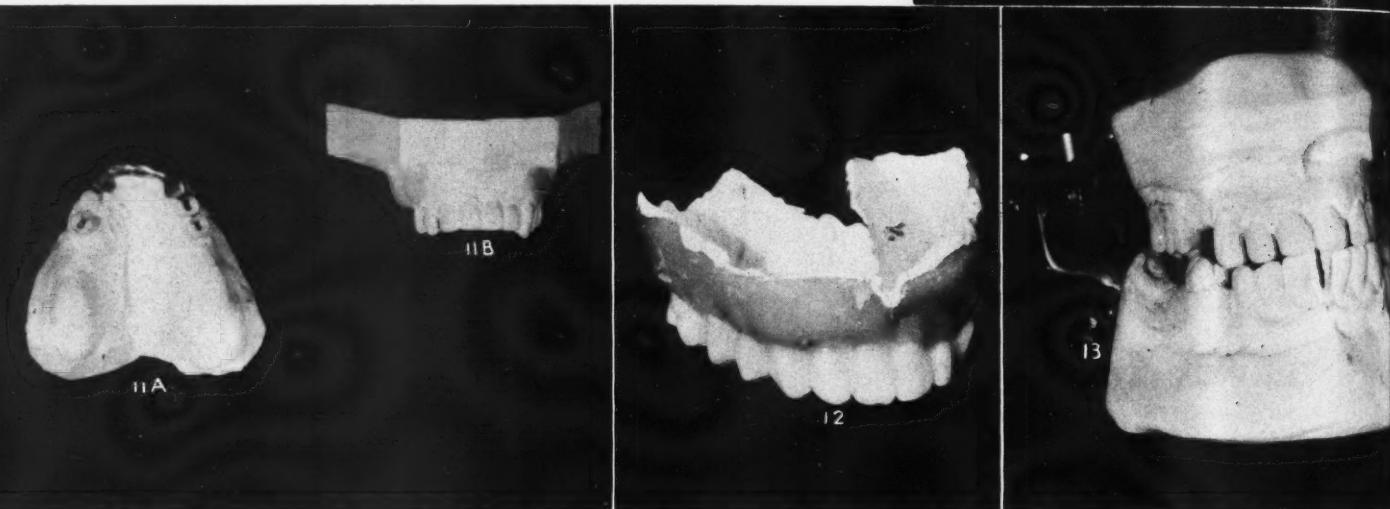


Fig. 9—Manner of packing acrylic resin to form the teeth for the splint. Ring of pink resin to form gum line. (Cross-section.)  
Fig. 10—Tooth colored acrylic packed in depressions with pink resin applied around for preliminary testing.  
Fig. 11—A, Practical case shown also in color plates A and B.

A, Natural teeth mounted on cast; B, front view of plaster casts.  
Fig. 12—Same case shown in Fig. 11. Acrylic splint with paste lining twenty-four hours after teeth were removed.  
Fig. 13—Another practical case shown also in color plate C. Case mounted on articulator.

tooth before the material "crust-hardens." If the case is properly prepared in foiling, there will be a distinct line indicated in the foil to serve as a guide for the packing of the tooth.

The pink acrylic resin is now added. This should be mixed in a proportion of 35 grains to 1 cc. of the liquid. Most surgical splints require approximately 200 grains of pink plaster in addition to the tooth resin. The jar of the mixed pink resin should be kept closed when not in use, so that the material will remain soft.

Some of the pink mix is first applied around each previously packed tooth. Do not cover the palate or complete the lingual or buccal sides of the case (Fig. 10).

Test the case by using damp cellophane covering in hot water not to exceed 150° F. Separate and correct any errors. Complete the packing.

**15. Processing the Case**—In this technique glycerin is preferred to boiling water or the vulcanizer. This

is because the technician may thus see just what is going on at all times; also, the temperature may be raised high enough to insure a complete polymerization of the product.

The semi-closed flask is placed in the glycerin which should show a temperature of not over 115° F. The heat should be slowly increased and the flask closed gradually as the material softens. This occurs at around 170° F. to 180° F. and the softened material should ooze out of the flask with a jelly consistency. This point should be reached in about twenty minutes after the flask has been placed in the glycerin and should be nearly closed at this time.

After the case in the glycerin has reached the boiling point, 212° F., the heat should be increased rapidly, carrying the temperature to 255° F. and held at this point for twenty minutes before it is turned off. Final tightening of the flask is done when the temperature recedes to 200° F. It is unnecessary to return the flask to

the glycerin and it may be quickly cooled in water. Follow the usual methods for polishing and finishing.

**16. Extraction and Insertion of the Splint**—The teeth are extracted and the splint tried in the mouth in order to determine whether any further correction is necessary as the case must go to place without difficulty.

A zinc oxide eugenol paste is now applied to facilitate healing and to protect the injured tissue (Fig. 12). Usually the tissue recession is even.

If the splint becomes too loose a reline with fresh acrylic may be quickly made without fear of breaking porcelain teeth. Foiling is required only between the new mix and the cast.

**17. Practical Cases**—Color plates A and B represent the case of a narrow maxilla with a pronounced protrusion of the mandible and show the appearance of the splint twenty-four hours after extraction. The casts (Fig. 11) indicate the short anterior in bridgework with the constricted

arch. In this immediate restoration waxing and carving were done directly over the soluble plastic teeth, adding length to the incisors and widening at the bicuspid area. This abnormal case necessitated a change in form of the teeth for esthetics but the general alinement of the teeth remained unaltered. Fig. 12 is the immediate splint in this case with a zinc oxide lining, illustrating how the appliance was built to restore function and improve esthetics.

Color plate C is of another practical case and demonstrates the ideal reproduction of the natural teeth in size, form, occlusion, and color. It will

be noted from the articulator mounting (Fig. 13) that the central incisal line remains unchanged in the restoration. It will also be observed in color plate C that the tips of the anterior teeth harmonize in semi-transparent bluish tone.

#### Advantages of Acrylic Splints over Usual Immediate Dentures

1. Acrylic splints afford a natural-appearing reproduction of teeth in form, position, occlusion, and color, as well as the retention of the vertical dimension.

2. The acrylic splint is superior in strength; it is light weight; there is no cracking, breaking, or checking of teeth during processing or when worn by the patient.

3. Acrylic splints may be relined or material may be added in little time.

4. The acrylic teeth may be quickly cut and polished for esthetics or occlusal balance.

5. With the acrylic splint there is no clattering or other annoying sound in talking or eating.

6. The splint remains as a permanent record of the natural tooth alinement.

55 East Washington Street.

#### DENTAL MEETING

## Dates

Wisconsin State Dental Economic Study Club, tenth annual meeting, Madison, August 2-3.

National Dental Association, annual convention, St. Louis, Missouri,

August 12-16. For information write to Doctor J. A. Jackson, 406 Commerce Street, Charlottesville, Virginia.

American Dental Association, annual meeting, Hotel Statler, Cleveland, Ohio, September 9-13.

American Dental Assistants Association, sixteenth annual meeting, Hotel Cleveland, Cleveland, Ohio, September 9-12.

The American Dental Hygienists Association, annual meeting, Carter

Hotel, Cleveland, Ohio, September 9-13.

American Association for the Advancement of Oral Diagnosis, annual meeting, Academy of Medicine Building, 2 East 103rd Street, New York, N. Y., October 17-18.

Odontological Society of Western Pennsylvania, Fall meeting, William Penn Hotel, Pittsburgh, October 22-24.

Greater New York Meeting, Hotel Pennsylvania, New York, N. Y. December 2-6.

# An Accurate Post-Valve Seal for Maxillary Dentures

WILLIAM A. COLBURN, D.D.S., and C. P. REMY, San Francisco

THERE ARE THREE technical reasons why an accurate post-valve seal is indicated and advised for all maxillary dentures: (1) for adequate retention; (2) to prevent gagging, and (3) to prevent food from lodging on the posterior border of the denture. There is a practical fourth reason: Patients like tight-fitting dentures.

Reproducing the depth of compressible tissue and covering the posterior palate with wax will demonstrate why some dentures have fair retention without post-valve seals. If the tissue is evenly distributed on the palate bone (Fig. 1, A), there may be some retention with any impression technique; but the retention can be greatly increased by an accurate post-valve seal. This even distribution of palatal tissue rarely occurs, as most of the wax post-valve seals reveal an irregular pattern (Fig. 1, B). Reproducing the depth of these irregular wax patterns on the master cast would obviously increase the retention by eliminating the possibility of air ingress. Gagging is prevented as the accurate post-valve seal prevents saliva bubbles from being generated by the intermittent contact of a loosely-fitting base to the palatal tissue.

The roofless beading and a check bead across the palate (Fig. 2), in conjunction with an accurate post-valve seal and a chamfer peripheral bead, create five irregular retention cups which act singly and collectively in maintaining the vacuum. To be more explicit, it is possible for air to enter one section or cup while the vacuum is maintained by the beading and the other retention cups.

Displacing compressible tissue with wax and reproducing the depth of the wax pattern on the master cast will also create an efficient retromolar pad seal (Fig. 3). The extent of the denture base over the pad can be accurately determined by the thickness of the wax.

## Technique

**Wax Post-Valve Seal**—1. Refit the try-in baseplate accurately to the maxillary cast.

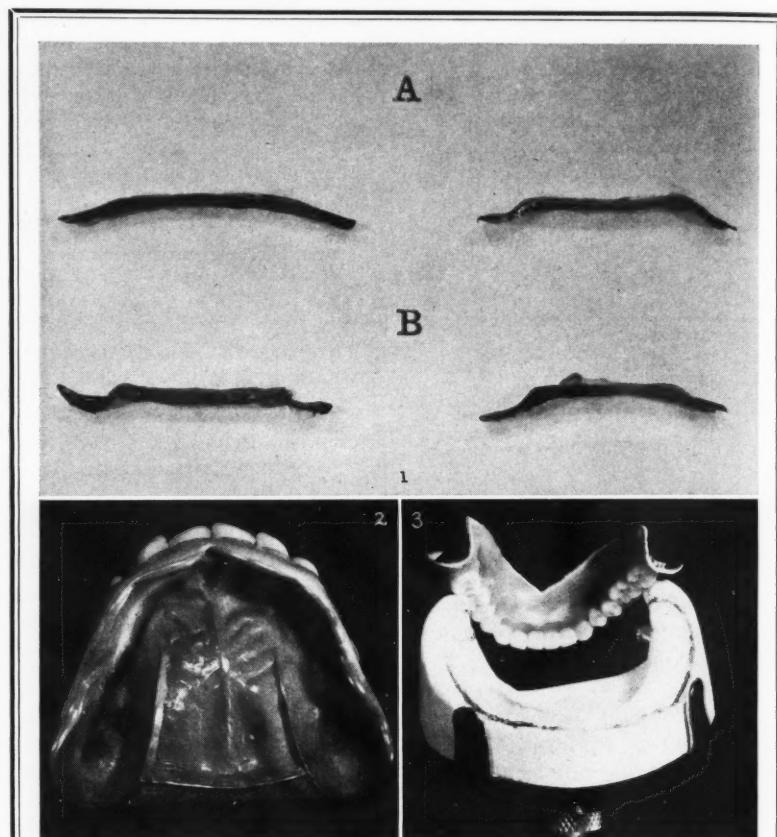


Fig. 1—A, Wax patterns of evenly distributed compressed palatal tissue; such tissue seldom occurs but accounts for cases of fair retention of a maxillary denture without a post-valve seal. B, Irregular and regular wax post-valve seal patterns, which when reproduced on the master cast, materially increase the retention and prevent gagging of a maxillary denture.

Fig. 2—Maxillary denture with roofless and check beading across the palate, which in conjunction with an accurate post-valve seal, and chamfer peripheral seal, create five irregular retention cups or areas. These act singly and collectively to maintain a vacuum.

Fig. 3—Wax retromolar pad seals, the thickness of which determines the area that the pad should be covered. When accurately reproduced on the master mandibular cast, the thickness of the seals increases the retention and comfort of the mandibular denture.

2. Thoroughly warm a 3 by 5 mm. strip of black carding wax and place on the moist try-in baseplate from tuberosity across the palate to the opposite tuberosity; warm the wax slightly on the baseplate.

3. Place the baseplate in the region of the anterior ridge first and compress the posterior palatal tissue antero-posteriorly.

4. Remove and chill before the palatal tissue starts to return to its former position (Fig. 4, A).

5. With a warm knife remove the excess wax, making the cut parallel with the edge of the baseplate (Fig. 4, B). If the wax pattern is too thick, it is an indication that the baseplate is over-extended. It can be checked for accuracy, however, by repeating the

procedure on a shortened baseplate.

**Accurate Post-Valve Seal**—With the same method and tools used by a die-cutter, an accurate post-valve seal can be accomplished by reproducing the generated wax post-valve seal in the master cast:

1. With a knife, or other sharp tool, a vertical cut (approximately the thickness of the wax pattern) is made across the posterior palatal border (Fig. 5, B).

2. Vignette the deep portion of the groove from 5 mm. to 10 mm. anteriorly for more pressure and to eliminate irregularities on the finished denture (Fig. 5, D).

3. Remove the wax pattern from the baseplate and test the depth of the cut by placing the wax pattern in the excavation on the master cast.

4. The roofless beading is placed from the tuberosity to the anterior third (Fig. 5, E), and these two are joined with another beading about 4 mm. anterior to the post-valve seal (Fig. 5, F).

450 Sutter Street.

## Adaptation from the Literature

### Diseases of Teeth and Maxillae As Cause of Trigeminal Neuralgia

[The Journal of the American Medical Association, Current Medical Literature, 113:2103 (December) 1939.]

According to M. Melchior there are certain diseases of the dental system and maxillary inflammations that contribute to the pathogenesis of trigeminal neuralgia. These hidden peripheral causes are:

1. Diseases of the pulp and periodontium, particularly
  - a) severe forms of gangrenous pulpitis;
  - b) gangrene of the pulp under restorations;
  - c) dental granuloma with osteitis.
2. Late sequels of tooth extraction, such as

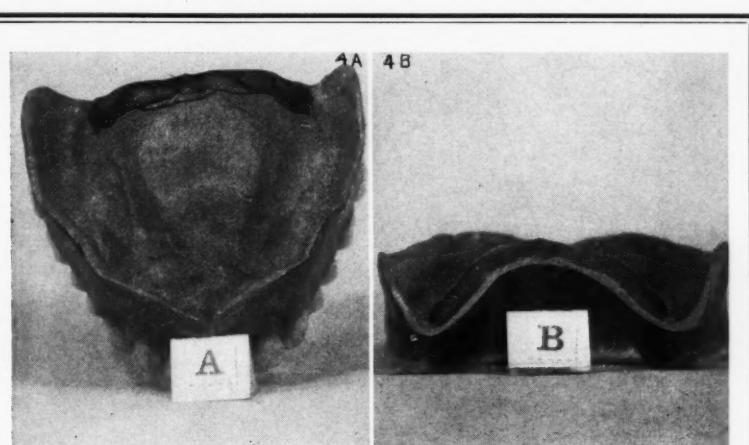


Fig. 4—A, Palatal view; B, cross section. Wax maxillary post-valve seal, the thickness of which determines the palatal outline and the depth of compressible tissue for adequate retention. When reproduced on the master cast the seal materially increases the retention and stops gagging.

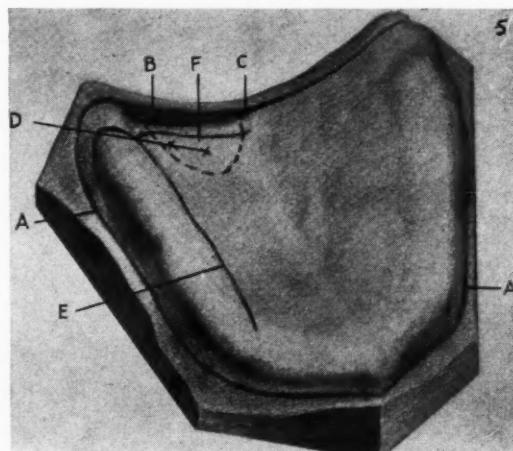
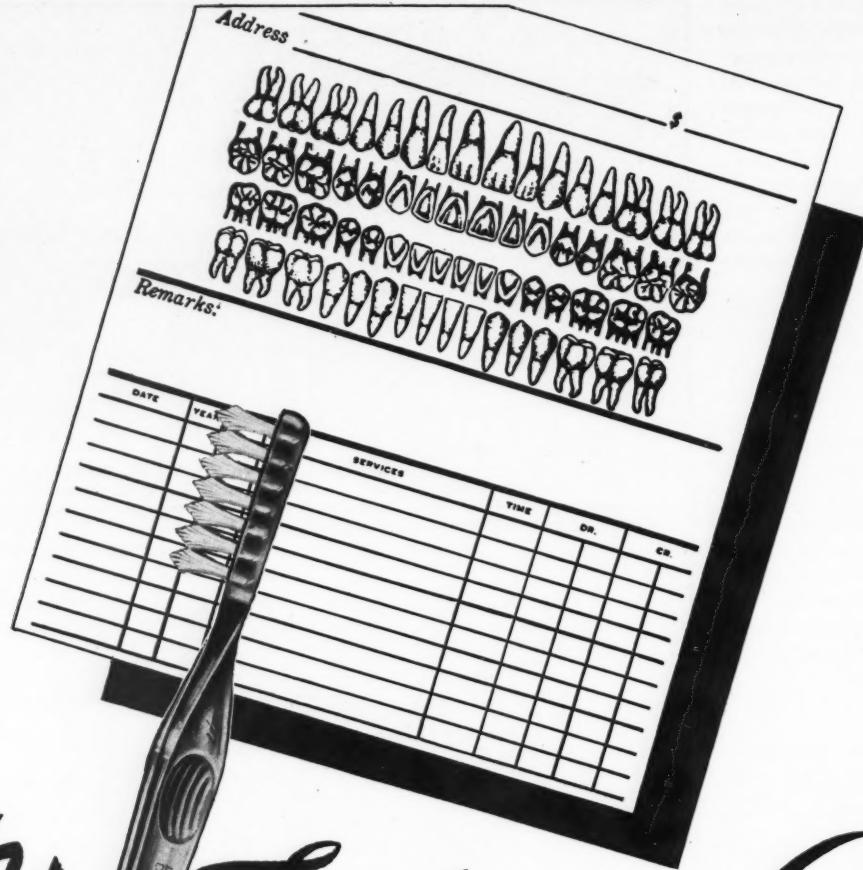


Fig. 5—A, Groove 1 mm. deep, cut in cast; B, wax pattern reproduced on cast and blended anteriorly about 10 mm. for more positive pressure (D). E, Roofless beading placed from tuberosity to region of anterior third; F, additional retention bead across the palate about 4 mm. anterior to the posterior border seal (See Fig. 2).

- a) residual pieces of root or sequesters healing into the jaw and only after many years becoming the concealed cause of severe neuralgias;
- b) amputation neuromas.
3. Chronic traumas and pressure and traction on nerves of periodontium
  - a) in cases of difficult perforation of teeth, particularly lower third molars;
  - b) in cases of retention of teeth (impactions).
4. Chronic maxillitis.
5. Chronic periodontitis or osteitis as a result of carious processes causing infections and inflammations of surrounding bone tissues.

The diagnosis requires a thorough and competent examination of the teeth and jaws, and treatment calls for removal of all diseased bone tissue even in edentulous mouths.



# "Your Teeth and Gums"

**Are in Good Condition . . . Keep On Using the  
D. D. TOOTH BRUSH**

Chart the patient's course in home care of teeth and gums by recommending regular use of the D.D. Tooth Brush and you will find a minimum of new chart marks necessary.

The D.D. Tooth Brush is modern — designed with the aid of 1,000 dentists. The hand naturally grasps the unique handle twist so that the bristles may point towards the teeth and not towards the gums. That, combined with the smooth and level contour of the long-life resilient bristles, makes for safe cleaning and gentle massage. Widely spaced bristle knots give practically total tooth surface coverage.

*The Modern Tooth Brush for Patients of the Modern Dentist*

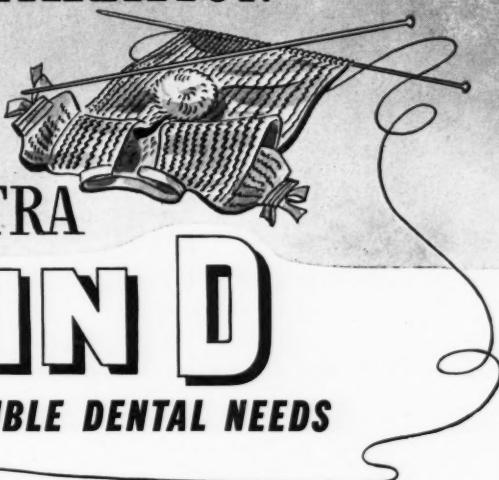
**BRISTOL-MYERS COMPANY**

**630 FIFTH AVENUE**

**DEPT. 2**

**NEW YORK, N. Y.**

# COMPLETE PREPARATION FOR Baby REQUIRES EXTRA **VITAMIN D** **MOTHERS-TO-BE HAVE DOUBLE DENTAL NEEDS**



In the months preceding and following the baby's birth, the young mother has greatest need of tooth and bone minerals and Vitamin D. Yet during this period her outdoor activities are greatly restricted, hence she must rely on sources other than sunlight for "sunshine" Vitamin D.

Remind your patients who are expectant or lactating mothers, that nature's concern for the young may impair their own dental structures unless they receive extra supplies of calcium, phosphorus and Vitamin D.

#### Equally Important for Babies' Teeth

Also point out the effects that a lack of the tooth minerals and Vitamin D may have upon the development of their children's teeth as stated in the following study:

"Some evidence of the effect of favorable prenatal diets upon dentition is provided by a comprehensive research project in child growth and development now being conducted at the Harvard School of Public Health. The routine of this study includes independent appraisal of the diet throughout pregnancy and infancy. X-ray and dental examinations of the children are made at three-month intervals up to 18 months of age, and after that at six-month intervals. Indications are that children whose mothers' diets throughout preg-

nancy were rated poor in respect to calcium, phosphorus and Vitamin D show considerable caries at an early age and have lower than average ratings for osseous development and density; that, at a comparable age, children whose mothers' diets during pregnancy were rated good or excellent tend to show no caries, and have average or above average ratings for osseous development and density." WHAT CONSIDERATION SHALL BE GIVEN TO PRENATAL CARE IN PREPARATION FOR GOOD TEETH? Percy R. Howe, D. D. S., Boston, Mass. The Journal of the American Dental Association, p. 373, March, 1939.

#### Vitamin D Now Easily Available

Ordinary foods contain little or no Vitamin D. But Vitamin D enriched foods, milks, accessory foods as shown below, and pharmaceuticals, are available everywhere, and cost little or no more than comparable products not so enriched. Make sure your patients know the importance of abundant Vitamin D to tooth health, and urge wider daily use of Vitamin D products to help protect the mother's tooth structure, and to aid the growing child to build sound, enduring teeth.



Every licensee of the Foundation is entitled to use this Seal on his licensed Vitamin D products and in related advertising. Every product licensed by the Foundation is periodically tested whether or not the Seal appears thereon. Write for this authoritative Booklet — sent Free upon request.



## WISCONSIN ALUMNI RESEARCH FOUNDATION MADISON, WISCONSIN



Irradiated Evaporated Milk—abundant Vitamin D at no extra cost.

Irradiated Metabolized and Fortified Vitamin D Milks.

Quaker Farina and Muffets—Rich in Vitamin D.

Cocomalt and Sunshine Graham Crackers—good sources.

Sunfed Flour and Bread—a better "Staff of Life."

Salerno Graham Crackers—enriched with Vitamin D.

Ovaltine, Dryco and Fleischmann's Yeast—good sources.

Also Viosterol and Viosterol-fortified medicinals prescribed by physicians

**BOWLES  
BITE  
CORRECTOR**

**a simple method of  
bite correction with-  
out removing casts**

Used with any plain line articulator, or with those having a similar bow attachment, to accurately correct the relation of the upper and lower casts without removing them and replastering. Such corrections are needed in full and partial denture work, in fixed and removable bridge work and, in fact, wherever an articulator is employed. While the Bite Cor-

rector does not imitate natural mandibular movement thus making an anatomical articulator out of a plain line one, it does serve an important work and time saving purpose. The coupon on page 260 will bring a folder outlining the detailed technic. Price: \$2.00 for Plain Line, Crescent or Gysi models—\$2.60 for Snow.



*Buffalo Dental*  
MANUFACTURING CO.,  
BUFFALO, N. Y., U. S. A.

**Sensibly  
Priced**

1 Bottle Ames Plastic Porcelain Powder —½ oz. ....	\$2.00
1 Bottle Ames Plastic Porcelain Liquid —14 cc. ....	\$1.00

*Use with standard tooth  
shade guides.*



● Ames leadership in the field of dental cements is vividly revealed by the acclaim which the profession is giving to the new Ames Plastic Porcelain. For the first time each of the physical properties most desired in plastic porcelain is embodied in this Ames product to the maximum degree—there is no sacrifice of one advantage to gain another.

One fair trial of Ames Plastic Porcelain will reveal the outstanding clinical superiority of the product. A three dollar investment brings to any dentist all the advantages of a plastic porcelain that meets every clinical and scientific requirement. Your dealer can supply you.

**The W. V-B. Ames Company  
Fremont, Ohio.**

# AMES DENTAL CEMENTS

**NOTES ON THE**

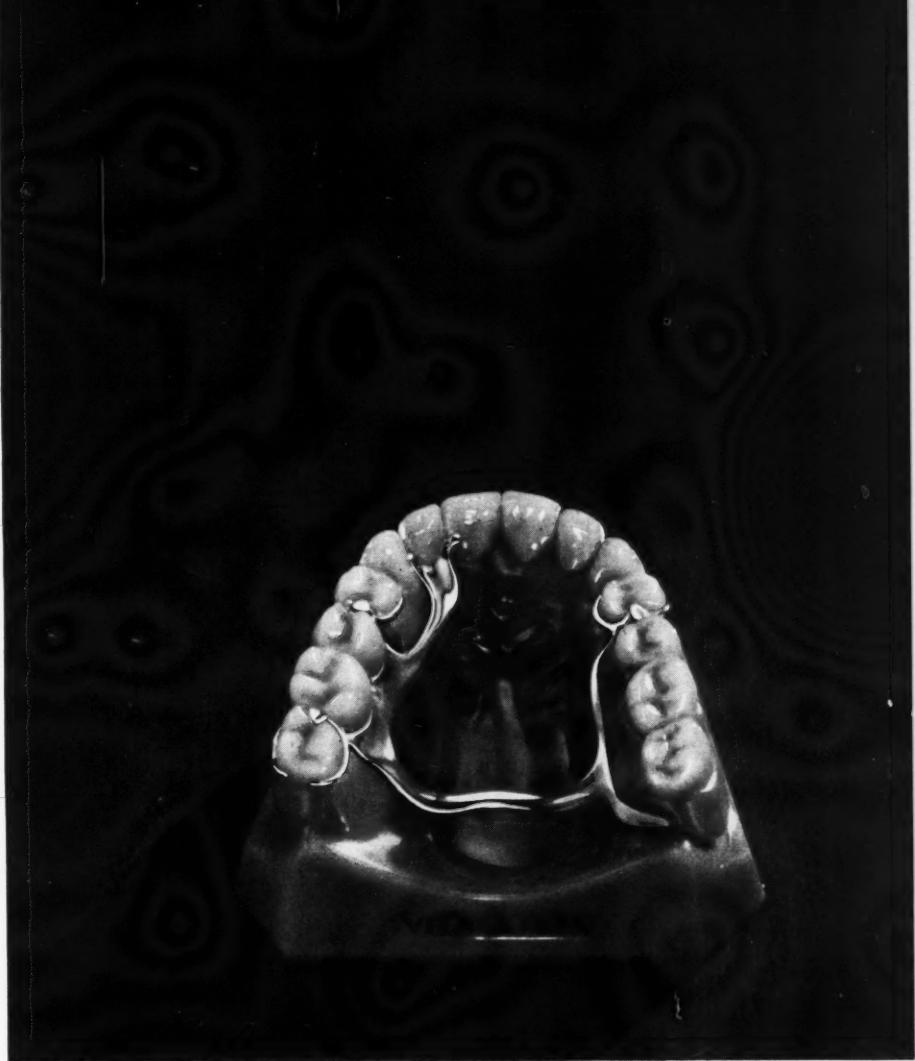
*Cuff*

**Dentistry Discovers Elmer . . .**

WHEN ELMER WHEELER, the president of the Tested Selling Institute and author of WORD MAGIC, appeared at the Midwinter Meeting of the Chicago Dental Society, he was making a first appearance before a dental group. He had been putting the sizzle in the steak, the tang in the cheese, the whiff in the coffee for years but heretofore he had not sprayed his magic sales formula before a dental group. Since Chicago in February, he has been going up and down the land telling dentists the facts of sales-life.

Elmer Wheeler has a five star formula for sales success: (1) find the emotional urge—people are not interested in dry facts; (2) develop "you-ability"; cut down on the "I" and "my"; (3) speak telegraphically saying it with flowers; that is, pat the customer on the back before kicking him in the pants; (4) give the customer a choice between things—the which-do-you-want idea; (5) watch how you say what you say, or "watch your bark"—or, as Shakespeare said it better, see that the patient does not quote: "I do not much dislike the matter but the manner of his speech."

Elmer Wheeler unquestionably has had a successful career and has done wonders aiding in the sale of square clothes pins, vacuum cleaners, two-eggs-in-every-malted-milk, under-arm deodorants for active men. Give the customer something to touch, feel, smell, hold, he says—play up the monkey instinct in people. Without wishing to appear too stiff-limbed or grave, I wonder how far we might carry the "monkey instinct" business in presenting the dental service without appearing ludicrous. Give them something to touch and feel, Mr. Wheeler suggests. How is this: "Mrs. Snodgrass, if you place your right index finger on the buccal surface of the upper right first molar, you will feel a concretion of salivary calculus that should be skillfully removed or your life, appearance, and comfort will be endangered. Which do you pre-



*Model No. 201* Beautiful Acrylic Resin Model, with  
jewel-like Vitallium Partial and lifelike Austenal Teeth. A  
powerful practice builder. One of a series of twelve designs.

## Build your practice with VISUAL AIDS

The ignorance of many patients concerning restorative dentistry is abysmal. To illumine this lack of perception of the benefits of dentistry, demonstrating models picture clearly how partial removables function in the mouth. Professional counsel is more readily accepted and acted upon. For detailed information regarding Austenal Demonstrating Models, communicate with us or with your Vitallium Laboratory.

Austenal Teeth — "Lifelike as Natural Teeth"



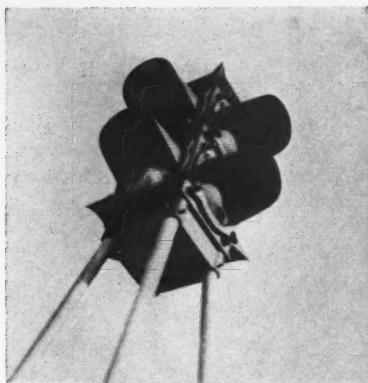
The only true Cobalt-Chromium Alloy being used in dentistry and surgery.

You can obtain outstanding service from the Vitallium Laboratory near you

A Product of

NEW YORK      AUSTENAL LABORATORIES, INC.      CHICAGO

\*TRADE MARKS REG. U. S. PAT. OFF. BY AUSTENAL LAB'S., INC.



## The "GO" Signal for A BUSY Summer— *Greater Patient Comfort*

People do not stop needing dentistry during the summer. In fact, with vacations and shorter hours they have more time for dental treatment during the summer months than in any other season. Yet many practices have a habit of going into a slump during this period. If this is true with your practice, why not give some thought to making dentistry more comfortable and more inviting to your patients?

In any season "fear of operating pain" is a vital factor in keeping people out of dental offices. In the summer, with many *more pleasant* things for people to do, their resistance to dental treatment is intensified. McKesson equipment for the control of pain can help you solve the "summer problem." The Nargraf for anesthesia and analgesia; the Easor for analgesia only, have greatly simplified the technique for the administration of nitrous oxide. Both machines provide advantages not available in any other gas dispensing equipment.

Return the coupon on page 260.

Let us tell you how McKesson equipment can help you.

**McKesson Appliance Co.**  
Toledo, Ohio

fer, an ordinary scaling operation or my best periodontal surgery?"

Give them something to smell! "Mr. Fishhell, may I ask you to whiff the putrefaction products from the pulp of this lower bicuspids?"

Or, to hold! For example, a string of inlays to tinker with, a denture or two to fondle and admire. Or, a plush box full of granulation tissue and old cysts.

To be sure, Elmer Wheeler has a whale of a sales story and tells it well. No one can argue with some of his principles, such as: "Know people and how they live; then, say something simple and easy for them to understand." Maybe I sound like the Voice of Antiquity, but I still think that dentistry is different from merchandizing and peddling and that people should come to us feeling that they may leave their armor-against-sales-talks home in the clothes closet.

### The Mail and The War and Dental Defense . . .

In the mail come two foreign publications—one from Germany and one from France. The stamps themselves are significant. The one from Germany shows Hindenburg in the vigor of his days. The ones from France are of a woman clad in white holding a sheaf of grain in her left hand. This may well be the last stamp with the imprint "Republique Française."

In the next mail is the *British Dental Journal*. Nothing in the magazine suggests the terrors that must beset the British people. The issue contains an abstracted article from a German magazine describing the treatment of German jaw fractures at the Polish front. There is nothing in the article to suggest that England is at present at war with Germany. The abstract is coldly factual, scientific. It does not bristle with propaganda. It must be a painful strain on a people to read in a publication of their enemy's how war injuries are treated with a view to treating their own injured. In the midst of the fighting the dive bombers and the crushing tanks take the headlines but in the decades to come, the broken faces, the armless and legless veterans, maimed in their youth through valor, will tell the story down the generations of what happened in the world because of a few vicious men called "Dictators."

France and England waited too



## **L**IStENING . . .

(Mother's Voice) "I'm so discouraged, Jane. This second set of plates is no better than the first. I just can't think of going the rest of my life without teeth . . . yet what am I to do?"

What, indeed? And what is her dentist to do? He's suffering from her misfit difficulty as much as she.

One thing he can do is to make sure, in this and every other case, that his adaptation is as nearly perfect as possible—by correcting every impression with Kelly's, the original corrective impression paste. Easy to apply in a thin coating, Kelly's Paste hardens quickly and records faithfully on the snap impression, waxed-up case or old denture every important detail of the soft mouth tissues which the new denture is to fit.

### **Grief of Misfit Can Be Prevented in Nearly Every Case**

#### **Why Not Give Kelly's Paste a Real Trial?**

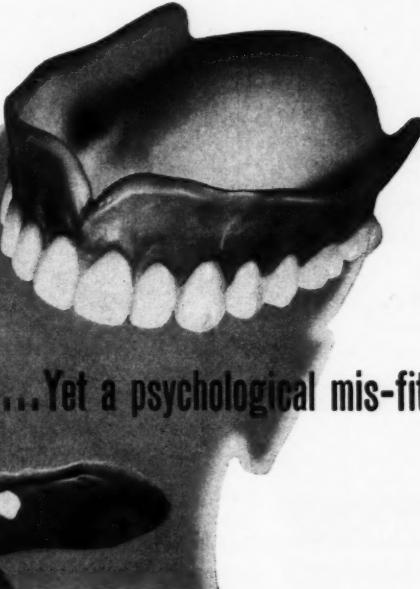
You take absolutely no risk when you try Kelly's Paste. It has been fully guaranteed ever since it was introduced over seven years ago. If for any reason at all you are not satisfied with the results, simply return the package for full credit. Why not order a package from your dealer, \$2.50? Kelly-Burroughs Laboratory, Inc., 143 N. Wabash Ave., Chicago, Ill.

## **"KELLY'S PASTE"**



[For full information with suggested  
technics, send coupon on page 260.]

# MECHANICAL MASTERPIECE



...Yet a psychological mis-fit

## DENTURE SUCCESS 60% MENTAL AUTHORITIES SAY

The patient's "mental attitude" can "make or break" new dentures! Why? Because even the best-made plate is a huge, hard, foreign mass in a mouth that's never worn one. Its pressure of 15 to 25 pounds torments tender gums . . . often becomes a mental hazard . . . and may end up, unused, in a bureau drawer. Unfortunately, no compliment to the dentist who made it!

EVEN THE FINEST PLATES  
NEED SHOCK ABSORBERS. That's

why during the difficult "learning period," thousands of thoughtful dentists prescribe DR. WERNET'S Powder . . . to provide a protective comfort cushion . . . to lessen irritation . . . to promote ease and assurance . . . to speed denture mastery . . . and to insure denture success!

A leader for almost 30 years, DR. WERNET'S Powder is never advertised to the public. We believe only a dentist is qualified to prescribe its use. SEND FOR YOUR FREE SUPPLY! Mail lower portion of this page, with your card, or letter-head, to Wernet Dental Mfg. Co., Dept. 190 Baldwin Ave., Jersey City, New Jersey.

IMPARTIAL LABORATORY  
TESTS SHOW  
**DR. WERNET'S POWDER**  
26.1% WHITER  
50% MORE VISCOUS  
46.5% MORE ABSORBENT  
THAN AVERAGE OF 5 LARGEST-  
SELLING BRANDS TESTED



NEARLY 50,000 DENTISTS  
USE AND RECOMMEND  
**DR. WERNET'S  
POWDER**  
Completes your Denture Service

(Please use coupon on page 260)

YOUR GRACIOUS HOST  
FROM COAST TO COAST

**IN NEW YORK:** The Gotham

**IN CHICAGO:** The Drake

**IN LOS ANGELES:** The Town house

**IN BELLEAIR, FLA.:** Bellevue Biltmore

**A.S. KIRKEBY, Managing Director**

**KIRKEBY HOTELS**

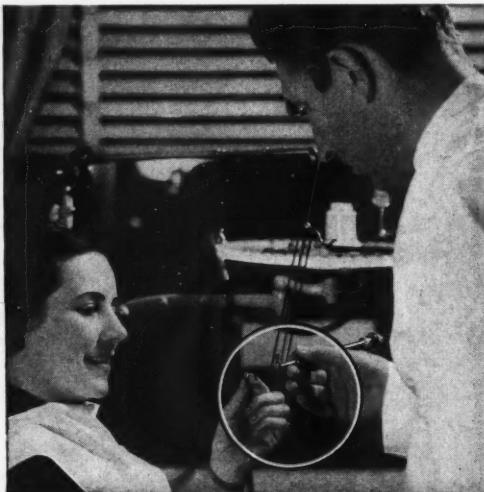
The Dental Profession has always preferred

**BS POLISHERS**

Your guarantee of  
Safety, Efficiency  
and Convenience!

Why jeopardize the good will of your patients, experimenting with untested instruments, when the safety, efficiency, and convenience of BS POLISHERS has been tested and proven by thousands of the most capable dentists in America and many foreign countries.

The millions of BS POLISHERS used through the years is your best assurance of dependable performance and protection. Write NOW for FREE sample. Use coupon pg. 260.



**YOUNG DENTAL MFG. CO.**

4958 Suburban R.W.  
ST. LOUIS, MO.

long. The forces of democracy apparently were too slow; debates were protracted; men stood for elections when their evil enemies drove through with singleness of purpose, without effective opposition. We should learn a lesson. To protect our liberties and the liberties of our children in the years ahead, it may be necessary for us now in the present to suspend some of our privileges.

Whether or not there will be a compulsory registration of all people in the country to determine their skills and abilities is something no one can predict at the moment. I think we should all be prepared, however, to volunteer part of our time—two or three hours a week, for example, for any project in which we can advance national defense. Dentists, for in-

stance, can easily volunteer to begin making dentally fit members of the National Guard who do not now receive any dental attention as part of their military service.

#### On the Receiving End of the Dental Instrument . . .

Again, I return to my old friend Hippocrates whose writings of 2400 years ago never lose their pertinence. In advising what to prescribe, Hippocrates said, "I will follow that system of regimen which according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous." That means, in terms of dental practice, that we will prescribe only what we would want done ourselves if we were at the re-

#### FOR YOUR PATIENT'S COMFORT

**Mu-col**

after extractions—use and recommend MU-COL. As an aid to normal granulation it is far superior to common salt solution and its cooling, soothing quality brings quick relief to the patient. For use also at the chair, as a cleanser for dentures and as an aid to correct fetid breath. A powder, non-deteriorating, quickly soluble, preferred by many dentists for over a quarter century.

THE MU-COL CO.  
Dept. DD-70  
Buffalo, N.Y.

PLEASE SEND MU-COL SAMPLES

Name..... D.D.S.  
Address.....



## THE WORD OF MOUTH ANTISEPTIC

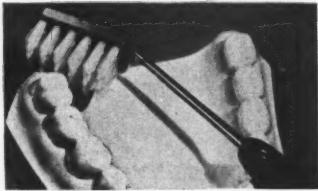
# VINCE

It speaks well for VINCE that many a prescriber first learned of this oral antiseptic by word of mouth. One dentist sees another and when they get around to talking "shop," Vince enters into the conversation. If one is unfamiliar with the preparation, the other will urge him to try it. If both are confirmed users, they compare notes on the various uses to which they put Vince. Most dentists use Vince as an all-round oral antiseptic. They prescribe it as a routine mouthwash and gargle; suggest its use in keeping dentures and appliances clean; use it as an aid in the treatment of Vincent's and other infections.

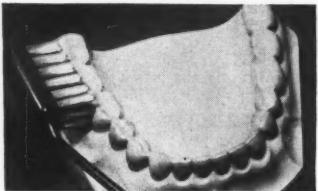
You, too, can learn of the acknowledged suitability of Vince for these purposes. A trial quantity will be gladly sent you. Please write your request on your letterhead. Vince is supplied in tins of 2, 5 and 16 ounces.

**Vince Laboratories, Inc., 121 West 18th Street, New York City**  
(Please use coupon on page 260)

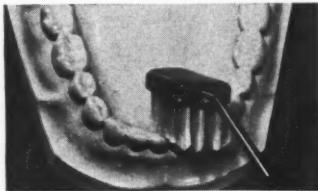
# We copied your dental mirror and made *A More Efficient Toothbrush*



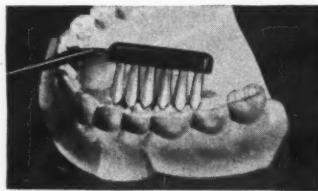
**The Molars . . .** The "Mouth-Mirror" angle makes it easy to reach behind the back molars.



**Buccal Surfaces . . .** Buccal and lingual surfaces of posterior teeth present no cleansing problem to the Squibb Angle Toothbrush.



**The Incisors . . .** Effective brushing of the difficult lingual aspect of incisors, even if the arch is narrow, is easily accomplished.



**Occlusal Surfaces . . .** It is easy to keep the cross row of bristles in vertical alignment with interproximal spaces—thus assuring more efficient brushing of occlusal surfaces.

## "IT GETS AROUND"

**ANALYZE** the design of the Squibb Angle Toothbrush. You'll find its shaft is bent at an angle—the same kind of angle that makes your dental mirror an effective instrument. That's the reason teeth can be cleaned more efficiently with the Squibb Angle Toothbrush.

The Squibb Angle Toothbrush has three rows of high quality, natural-tufted bristles—six tufts to a row. Two degrees of stiffness—hard and medium. It is adaptable to all types of mouths and all brushing techniques.

Recommend the Squibb Angle Toothbrush. It's a brush you will like to use yourself—a toothbrush you will be pleased to recommend to your patients.

The Forgotten Tooth Becomes  
The Remembered Tooth with the  
**SQUIBB ANGLE TOOTHBRUSH**

ceiving end of the dental instrument, and we will abstain from doing what we would not want done if we were the patient in the chair. If we make this test before every treatment suggested, our patients will not be endangered by high pressure selling or by needless operations. Yes, there are, unfortunately, such things as high pressure selling and needless operations practiced in dentistry. Many bridges are made for edentulous spaces that have been present for years without great injury to the dental tissues; many of these bridges are prescribed to meet the payment on some dentist's automobile or to underwrite a vacation. These are harsh words but not preaching. It is far better to discuss our shortcomings among ourselves than to have muckrakers of the public press do an exposé of dentistry. If we follow closely in the footsteps of the teachings of Hippocrates, we may be protected even from the stresses of the modern day.

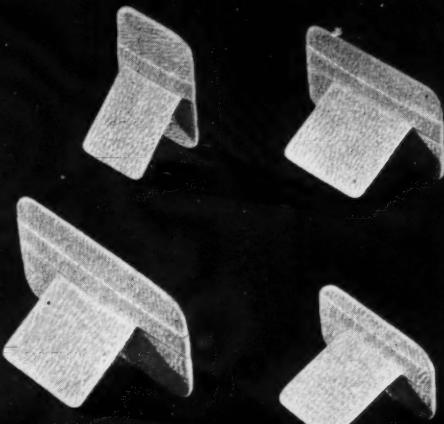
#### **Smoking Women . . .**

Not necessarily hot but smoking are a lot of our women patients who drip cigarette ashes over themselves as they try to look glamorous in the dental chair—as if anyone could look glamorous with mouth agape. These women hold cigarettes in their hands like Roman candles; the cigarettes droop from the lip like wilted lilies. To the dental tissues they bring ugly stains, gingivitis, and buccal cacoma. In my own youth, the women who smoked lived beyond the tracks and they used perfumed Milo's in violet boxes—so I was told. Gone are the perfumed cigarettes in the dainty boxes but now women demand cigarettes with tips to match their lipstick.

I am thinking some of hanging a sign in the dental office: "No Smoking." If anyone has a suggestion as to how to get women to obey the sign, I will be glad to hear of it. Men do not seem to look upon the dental office as a cocktail lounge or a pool room; they seem to smoke much less frequently in the operating room than do women. While we are figuring out a tactful way to put up a "No Smoking" sign, maybe some smart dentist can tell us how to get around the lipstick problem—I mean, to be sure, the kind that gets on the dentist's fingers during the operation, not the kind that may find its mark elsewhere. Should women be given a chance to

## **Now Eastman Announces . . .**

### **NEW LOW PRICES ON BITE-WING FILM**



**Reductions up to 33½%  
Effective July 1  
on the Four Types  
of This Special Film  
for Interproximal  
Radiography**

FOLLOWING the recent reduction in prices of all Eastman periapical and Eastman occlusal dental x-ray films, Eastman now lowers the prices of the four types of *Bite-Wing* Dental X-ray Film. In establishing these prices no change was made in the quality of the film or in the packets. The list below shows how much you will save:

#### **EASTMAN BITE-WING DENTAL X-RAY FILM**

*Safety Base—One film per packet*

##### **ANTERIOR (Adult and Child)**

**TYPE 1,  $\frac{15}{16}$ " x  $1\frac{9}{16}$ "**

	OLD	NEW
Package, 1 dozen packets . . . . .	\$6.5	\$4.5

##### **POSTERIOR (Adult)**

**TYPE 2,  $1\frac{5}{8}$ " x  $1\frac{1}{4}$ "**

Package, 1 dozen packets . . . . .	.75	.50
------------------------------------	-----	-----

**TYPE 3,  $2\frac{1}{8}$ " x  $1\frac{1}{4}$ "**

Package, 1 dozen packets . . . . .	.85	.60
------------------------------------	-----	-----

##### **POSTERIOR (Child)—Special order**

**TYPE 0,  $1\frac{3}{8}$ " x  $\frac{7}{8}$ "**

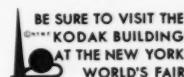
Package, 1 dozen packets . . . . .	.65	.45
------------------------------------	-----	-----

*Bite-Wing* radiography has become of major importance in the practice of dentistry because the radiographs reveal conditions of the coronal two-thirds of the teeth and the alveolar tissues that otherwise might remain undiscovered until extensive damage had resulted. Now, with the cost of *Bite-Wing* films materially reduced, you will find it ad-

vantageous to make complete interproximal x-ray examinations of all of your patients, periodically . . . to make radiographs of local areas as a routine measure during the course of certain operative work.

Your regular dental dealer has Eastman *Bite-Wing* Dental X-ray Film in stock. Order an adequate supply from him today.

**EASTMAN KODAK COMPANY**  
*Medical Division*



scratch it off as they settle in the dental chair? Should the dentist or assistant hand the woman patient a piece of cleansing tissue, or should the dentist rub the lipstick off himself with not too gentle a hand? I have found that after two hints by way of cleansing tissues for removal of the lipstick, smearing the stuff beyond the angles of the mouth as if unavoidably, will discourage women from appearing in the chair at their next appointments with wet paint.

We are not degenerating into a women's magazine nor do we wish to conduct a beauty tips department here, but, how do you handle the smoking and lip rouge problem in the dental office?—E. J. R.

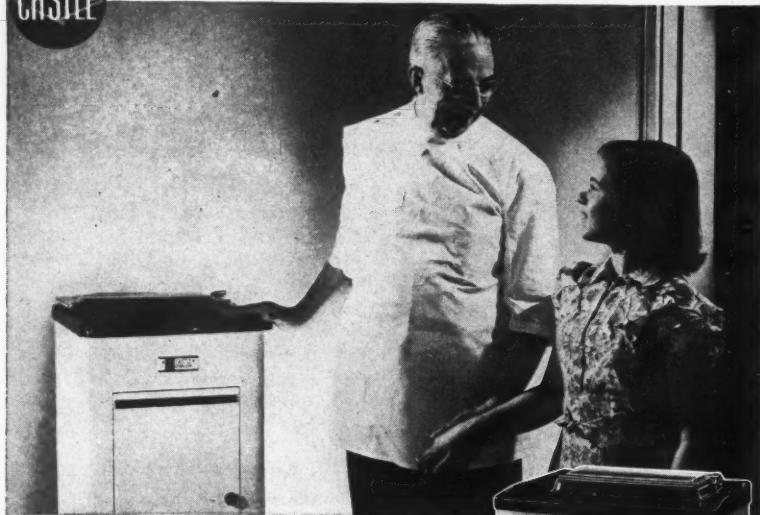
## ADVERTISING INDEX

Ames Co., W. V-B.....	250
Antidolor Mfg. Co., Inc.....	227
Austenal Labys., Inc.....	251

Bosworth Co., Harry J.....	262
Bristol-Myers Co.....	225-248
Buffalo Dental Mfg. Co.....	250
Castle Co., Wilmot.....	258
Caulk Co., L. D.....	224
Columbus Dental Mfg. Co.....	259
Cook Laboratories, Inc.....	227
Corega Chemical Co.....	261
Dentists' Supply Co., The. 4th Cover	
Eastman Kodak Co.....	257
Johnson & Johnson.....	228
Kelly-Burroughs Laby., Inc.....	252
Kerr Dental Mfg. Co.....	260
Kirkeby Hotels.....	254
Konformax Labys., Inc.....	223
Lavoris Co.....	261
McKesson Appliance Co.....	252
Minimax Co.....	2nd Cover
Mu-Col Co.....	254
Runnymede Hotel.....	258
Sharp & Dohme.....	262
Smith & Son Mfg. Co., Lee S.....	2nd Cover
Squibb & Sons, E. R.....	256
Vince Labys., Inc.....	255
Vernon-Benshoff Co.....	3rd Cover
Wernet Dental Mfg. Co.....	253
White Dental Mfg. Co., The S.S.....	226
Wilmot Castle Co.....	258
Wisconsin Alumni Research Foundation.....	249
Young Dental Mfg. Co.....	254



"THE MARK OF A CAREFUL PRACTITIONER"



MODEL "90"

## No Danger OF INFECTION HERE

Once you place your sterilizing problems in the capable care of a Castle Sterilizer, there need never be any doubt about sterilizing safety.

Double automatic control, lifetime cast-in-bronze, leak-proof boiler, convenient safety-foot-lift all contribute to positive sterilizing safety, increase your own confidence in your work. And, its sleek, modern appearance speaks professional efficiency louder than words. Write for full details.

**WILMOT CASTLE COMPANY**  
1109 UNIVERSITY AVENUE • ROCHESTER, N. Y.



MODEL "50"

## CASTLE STERILIZERS

## YOUR HOME in ATLANTIC CITY

The RUNNEMEDE on beautiful Park Place, overlooking the ocean, is a favorite hotel for those who are accustomed to the finer things in life.

Here you will find all those little refinements so essential and necessary in one's daily life—truly, "your home away from home." Attractive rates.

*The  
Runnymede*

Everett J. Higbee, Manager